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April 24th.

Vice President **BRIDGES** in the Chair.

The Committees to which were referred papers read by Dr. Le Conte April 3d; by Dr. T. C. Henry U. S. A. read same date; by Dr. Genth, read April 10th; by Mr. C. Girard, read April 17th; by Mr. Cassin, read same date; by Mr. Blake, read April 24th; and by Prof. Baird, read same date, reported in favor of publication in the Proceedings.

Analytical table of the species of Hydroporus found in the United States, with descriptions of new species.

By JOHN L. LECONTE, M.D.

[The reference Lec.[1] denotes that the species are described in the Annals of the Lyceum of Natural History of New York, Vol. 5; they are all Californian. Those not so marked were described by me in Agassiz' Lake Superior.]

HYDROPORUS Clairville.

A. Breviter ovati convexi, glabri; thorax haud impressus.
a. ·1, Epistoma rotundatum haud marginatum 1. farctus.
b. Epistoma rotundatum subtiliter marginatum;
.12, subopacus valde punctatus 2. hydropicus *Lec.*[1]
.12, nitidus piceus valde punctatus 3. punctatus *Aubé.*
.11, parcius punctatus, thorace rufo (elytris sæpe maculatis) 4. cuspidatus *Germ.*

B. Breviter ovati, minus convexi, glabri: thorax linea basali nulla; epistoma rotundatum subtiliter marginatum;
·09, Thorax basi utrinque foveatus; elytra costula laterali brevissima; macula communi alteraque utrinque nigris 5. latissimus *Lec.*[1]
·08, Thorax basi haud foveatus; elytra costula laterali longiore; macula communi alterisque utrinque tribus nigris 6. acaroides.
Convexior piceus immaculatus, elytris thoraceque simplicibus;
·07, subtiliter punctatus 7. convexus *Aubé.*
·05, subtiliter punctulatus 8. granum.

C. Breviter ovatus minus convexus glaber; thorax plica brevi basali utrinque ornatus, cum elytrorum costa discoidali connexa:
·06, testaceus, elytris fuscis testaceo-nebulosis (mihi ignotus) 8^1. exiguus *Aubé.*

D. Oblongi; thorax striola utrinque basali; epistoma haud marginatum.
1. Striola in elytris continuata.
* Elongati, glabri.
c. Elytra nebulosa, minus subtiliter punctata;
·065, fuscus testaceo vix nebulosus, sequente paulo angustior 9. obscurellus *Lec.*[1]
·06, testaceus pectore thoracis medio, elytrorumque lineolis fuscis 10. affinis *Say.*
·06, testaceus, thoracis medio, elytrorumque lineolis paucis fuscis 11. macularis *Lec.*[1]
·06, testaceus thorace basi nigro, elytris vittatis 12. pullus.
d. Elytra nebulosa, subtiliter punctulata;
·055, elytris striola basali longiuscula 13. lacustris *Say.*
e. Elytra maculis vel fasciis transversis ornata;
·065, minus subtiliter punctatus, (femina opaca) 14. cinctellus *Lec.*[1]
·05, subtiliter punctatus, stria suturali nulla 15. amandus *Lec.*[1]
·05, subtiliter punctatus, stria suturali distincta 16. subtilis *Lec.*[1]
** Elongati, subtiliter pubescentes; elytra nebulosa:
·06, testaceus, elytris postpectoreque fusco-piceis 17. inconspicuus.

*** Minus elongati, glabri, elytra valde punctulata, nebulosa.
·05, ferrugineus, postpectore, thoracis basi elytrisque piceis 18. granarius *Aubé.*
2. Striola in elytris haud continuata ;
·05, flavo-testaceus, pubescens, elytris piceis testaceo fasciatis 19. flavicollis.

E. Oblongi, longiusculi glabri, thorax utrinque striola impressus, et postice transversim subdepressus, cum elytris angulum formans ; epistoma haud marginatum.
·17, subtus niger, supra luteus, elytris lineis utrinque 6 guttisque duabus externis nigris ornata 20. duodecimlineatus *Lec.*
·13, parce punctatus, thorace elytrisque variegatis, his fortius biseriatim punctatis 21. scitulus.

F. Ovales minus convexi dense punctulati pubescentes ; thorax elytris angustior, angulis posticis obtusis ; epistoma rotundatum haud marginatum.
·17, elytris striis nonnullis insculptis fasciisque variegatis 22. striatellus *Lec.*

G. Oblongo-ovati, modice convexi, confertim punctati pubescentes ; thorax cum elytris angulum formans, angulis posticis rectis ; epistoma truncatum.
·17, rufo-testaceus, elytris atris fasciatis 23. venustus.

H. Oblongi minus convexi, pubescentes ; thorax haud impressus ; elytra fortiter punctata lineis utrinque angustis duabus lævibus ; epistoma rotundatum vix subtiliter marginatum.
·13, supra niger, capite elytrorumque fasciis testaceis, thoracis lateribus rufis 24. striatopunctatus *Mels.*

I. Oblongi, præcipue antice obtusi ; thorax lateribus sæpissime marginatis, cum elytris angulum vix vel haud formantibus, his lineis nullis.

A. Pubescentes, (♂ præcipue punctati, ♀ punctulatæ ;) thorax æqualiter punctatus.
f. Epistoma rotundatum late marginatum ;
Ferrugineus, thorace apice et basi nigricante, elytris nigris fasciatis ;
·18, thorace subtiliter marginato 25. consimilis *Lec.*
·17, thorace latius marginato, antice minus obtusus 26. undulatus *Say.*
·16, thorace latius marginato (parum infuscato,) antice magis obtusus 27. oppositus *Say.*
·15, thorace latius marginato, adhuc latior, obscure ferrugineus, elytris nigro-piceis 28. punctatissimus *Aubé.*
g. Epistoma rotundatum haud marginatum.
* Ferruginei, elytris nigris, flavo-maculatis.
α. maculis elytrorum fasciatis.
·18, H. opposito simillimus, thorace basi nigricante 29. spurius.
·17, longior, subovalis, thorace vix infuscato 30. mixtus.
β. maculis lineolatis confluentibus.
·18, convexus, subovalis, velutinus, thorace apice basique infuscato 31. sericeus *Lec.*
·16, minus convexus, subovalis, thorace haud infuscato 32. semirufus.
·08, paulo convexus, longior antice obtusus, thorace haud infuscato 33. lineolatus.
γ. elytra regulariter vittata.
·16, thorax apice basique nigricans, elytra nigra, margine vittisque utrinque duabus testaceis 34. vittatus.
** Nigri, æqualiter punctati, parum convexi ; thorace sæpe vix marginato, ad angulos posticos sæpe leviter impresso.
·15, caput thoracisque latera ferruginea ; elytra subfasciata 35. vitiosus.
·18, thorax elytraque maculata ; longior, ovalis subtilissime punctulatus 36. catascopium *Say.*

Fere immaculati; sæpe versus latera rufescentes;
vix conspicue punctulati,
·20, capite thorace pedibus abdominisque lateribus piceo-rufis, illo punctulato 37. modestus *Aubé.*
·20, humeris tibiis tarsisque piceo-testaceis, capite vix punctulato 38. axillaris *Lec.*
·26, niger ore solo rufo piceo 39. fortis *Lec.*
·21, longior postice magis acutus, pedibus ore elytrisque lateribus testaceis 40. notabilis *Lec.*
distincte punctulati vel punctati,
·16, latior postice magis acutus, thorace haud impresso 41. niger *Say.*
·20, longior ovalis 42. subpubescens *Lec.*

B. Præcipe nigri, parum convexi; thorax inæqualiter punctatus, disco sæpe sublævi:
h. Thorax lateribus vix marginatis; elytra punctulata:
a. thorax cum elytris angulum non formans;
longiores fere regulariter ovales
·14, parcius punctatus, vix pubescens 43. tartaricus *Lec.*
·16, nigro-rufus, pubescens pectore nigro, thoracis disco fere impunctato (angustior, convexior) 44. americanus *Aubé.*
·16, *latior*, antice magis obtusus, capite thorace, abdominis lateribus pedibusque piceo-rufis, pubescens 45. dichrous *Mels.*
b. thorax cum elytris angulum obtusissimum formans;
angulis posticis fere rectis (elytra sæpe testacea;)
·14, niger, vix parce pubescens, parcius punctatus 46. caliginosus *Lec.*
·125, subtiliter pubescens 47. subtonsus.
·12, glaberrimus 48. varians *Lec.*
angulis posticis fere obtusis;
·12, niger subtiliter pubescens 49. puberulus *Lec.*
i. Thorax lateribus conspicue marginatus, cum elytris angulum haud formans.
·17, niger punctatus pubescens, pedibus rufo-piceis (species dubia) 50. tenebrosus *Lec.*
·17, niger punctatus pubescens, elytris pedibusque testaceis (vid synon.) 50^1. lutulentus *Lec.*
·12, niger parce punctulatus vix pubescens 51. vilis *Lec.*[1]
·13, testaceo-piceus, glaber, thorace disco convexo, elytris parce punctatis 52. oblitus *Aubé.*
·14, fusco-testaceus glaber, thorace fortiter marginato, elytris parcius punctulatis 53. collaris.
·15, niger confertim punctatus magis ovalis, glaber 54. latebrosus *Lec.*[1]

C. Ferruginei, glabri subtiliter punctulati, elytris nigris, fasciatis; thorace ad apicem late infuscato;
·14, longior fere ovalis, subtus piceo-niger 55. concinnus.
·13, antice latior et obtusus, subtus ferrugineus 56. pulcher.

K. Longiores, obconici glabri, elytris piceo-testaceis parce punctatis; epistoma haud marginatum, rotundatum; antennæ maris medio dilatatæ.
·2, Elytra mixte punctata et punctulata 57. conoideus *Lec.*
·25, Elytra haud punctulata, parce punctata 58. difformis.

L. Oblongo-ovales, vel ovales, glabri; thorax angulis posticis obtusis cum elytris angulum obtusum sæpe formans; epistoma haud marginatum, rotundatum.
k. Longiores, ovales, rude punctati;
·20, elytris punctatis, stria suturali duabusque dorsalibus distinctis 59. similis *Kirby.*
·20, elytris punctatis, striis nullis 60. picatus *Kirby.*
·15, elytris punctatis et punctulatis 61. dispar *Lec.*
l. Ovales punctati; thorax elytris vix angustior
·11, elytris parcius punctatis 62. turbidus.

·13, elytris densius punctatis 63. suturalis *Lec.*

m. Thorax elytris conspicue angustior ;

α. Ovales convexi ; supra testacei,

·13, elytris mixte punctatis et punctulatis 64. ovoideus *Lec.*

·15, densius punctatus, thoracis elytrorumque medio infuscato 65. medialis *Lec.*[1]

·15, punctatus, elytris postice infuscatis 66. fraternus *Lec.*[1]

β. Longiores, minus convexi, punctati vel subtile punctati ; supra piceo-testacei,

·15, thorace elytrisque vix infuscatis distinctius punctatis 67. patruelis.

·15, thoracis medio elytrisque infuscatis, convexior 68. lutescens *Lec.*[1]

·17, adhuc longior, thoracis medio elytrisque postice infuscatis 69. nubilus.

·15, latior, thorace ad basin, elytris in disco infuscatis 70. discoideus.

M. Subovati, convexi subtiliter pubescentes, epistoma ad medium late emarginatum.

·14, punctatus, testaceus, elytris nigris fasciatis 72. hybridus *Aubé.*

·09, flavo-testaceus subtilius punctatus, elytris piceis ad latera maculatis 73. mellitus.

The following species are not included in the above list, as I have not had specimens for examination :

From Russian America ; 74, H. griseo-striatus *De Geer ;* 75, H. oblongus *Aubé ;* 76, H. humeralis *Aubé ;* 77, H. contractulus *Mannh. ;* 78, H. ruficapillus *Mannh. ;* 79, H. rufinasus *Mannh. ;* 80, H. erythrostomus *Mannh.* No. 75 is closely allied to H catascopium *Say.* Nos. 78—81 are described in the Bull. Mosc. for 1852, pp. 304, 305.

From Atlantic America; 81, H. aulicus *Aubé ;* 82, H. nigro-lineatus *Steph.* (fide Kirby, Fauna Bor. Am. 66) ;

§ 1. *Synonyms and Doubtful Species.*

H. lævis *Kirby*, is possibly a variety of H. 12-lineatus. *Lec.*, and according to Mr. White, (Cat. British Museum,) is H. alpinus *Paykull.*

H. ruficeps *Aubé* seems not sufficiently distinct from H. modestus *Aubé.*

H. limbalis *Mels.* is probably the female of No. 53, H. oblitus *Aubé*, with which, according to a typical specimen, H. luridipennis *Mels.* is identical.

H. discicollis *Say*, according to Dr. Harris, is H. dichrous *Mels.*, but the description is very unsatisfactory, and I have been compelled to regard it as indeterminate.

H. interruptus and H. parallelus *Say*, are not different from H. catascopium.

H. hirtellus *Lec.*, is smaller and more pubescent than H. subpubescens *Lec.* but is probably only the female of that species.

H. fasciatus *Harris* (N. Engl. Farmer, Dec., 1828) is H. undulatus *Say ;* the male is H. pubipennis, and the female H. velutinus *Aubé* ; for a typical specimen I am indebted to Dr. Harris.

H. proximus *Aubé* is probably H. oppositus *Say*, (vide infra No. 27.)

H. punctatissimus *Aubé* is H. niger *Say.*

H. pulicarius *Aubé* is H. lacustris *Say.*

H. nanus *Aubé* is H. affinis *Say ;* for a type I return my thanks to Dr. Harris.

Hygrotus pustulatus *Mels.* is H. cuspidatus.

H. humeralis|| *Lec.* is now H. axillaris *Lec.*

H. luridipennis|| *Lec.* Agassiz' Lake Superior, 216, is now H. lutulentus *Lec.* (No. 50[1].) Farther investigation, aided by more extensive series of specimens, may show the necessity of uniting with it H. tenebrosus, from which it differs principally in color.

§ 2. *Descriptions and Notes.*

1. H. **farctus** breviter ovalis, postice subacutus, ferrugineus glaber, capite punctulato, haud marginato, thorace confertim subtiliter punctulato, lateribus

rectis tenuiter marginatis, elytris piceis fere opacis confertissime punctulatis. Long. ·10.

One specimen from Massachusetts was presented to me by Dr. C. Zimmermann. A little less globose than H. cuspidatus, and readily distinguished by the finer and denser punctuation, and by the epistoma being without a margin.

6. H. acaroides, breviter ovalis, postice acutus, parum convexus, ferrugineus, dense subtilius punctatus, thorace margine basali nigricante, elytris costula laterali parum elevata ad medium abbreviata, alteraque externa fere obsoleta; sutura, macula magna communi ad medium, alterisque utrinque tribus nigris; postpectore abdomineque nigro-piceis, segmentis duobus ultimis ferrugineis. Long. ·10.

Illinois, Mr. Willcox; Kentucky, Mr. Wild. The elevated lines of the elytra are very slight, but may be distinctly traced; behind them, but apparently in continuation, is a linear brownish cloud which continues to the apex, outside of the three discoidal spots, which surround the large subquadrate common spot at the middle of the elytra. The spots are sometimes extended and become more or less confluent. In H. latissimus the elevated line is very short, so that it appears rather like a fold, limited externally by a moderately deep oblong fovea.

8. H. granum, breviter ovalis utrinque attenuatus, subconvexus, piceo-testaceus nitidus glaber, capite subtiliter marginato, thorace parce punctulato, lateribus rectis subtiliter marginatis, elytris subtiliter parce punctulatis. Long. ·05.

One specimen from Louisiana given me by Mr. Guex. Smaller and more convex than H. convexus, which it very closely resembles; the sides of the thorax are, however, not broadly rounded as in that species, and the punctures of the elytra are much smaller and more distant.

Desmopachria nitida *Babington* (Trans. Ent. Soc. Lond. 3, 17, tab. 1, fig. 5) does not appear by its specific characters to be different from H. convexus *Aubé*. The generic characters agree accurately, except that the posterior tarsi are not four-jointed. This, if true, would be so anomalous, that the correctness of the observer may well be doubted; nevertheless, in H. convexus the posterior tarsi are more flattened and more gradually attenuated than in the other species of the genus, and therefore the terminal joints are more closely connected; should the specimen have been mounted in the clumsy manner in which small species are frequently preserved, the articulation might be readily obscured by gum, in such manner as to be overlooked. The claws of the hind feet of the species under consideration are more slender and more bristle-like than in H. cuspidatus and allies.

8^1. H. exiguus *Aubé*. Unknown to me. Said by Erichson (Bericht &c. in Wiegm. Arch. 1842, 2, 209) to have as a synonym Anodocheilus maculatus *Babington* (loc. cit.) from South America. The genus Anodocheilus is described as differing from Hydroporus, in having no tooth at the middle of the emargination of the mentum.

12. H. pullus, oblongus, postice vix acutus, flavo-testaceus nitidus glaber, capite vix punctulato, thorace parce punctulato, basi ad medium nigro-marginata, striola obliqua utrinque notata in elytris brevissime continuata, his distinctius punctatis, sutura vittisque utrinque tribus nigro-piceis, prima antice abbreviata et secunda approximatis, stria solita punctorum interna magis distincta. Long. ·06.

Louisiana; discovered by Dr. Schaum, to whom I am indebted for specimens. The vittæ of the elytra are quite narrow, the second one is confluent with the dark colored suture at the base; all the vittæ extend nearly to the tip; the under surface is of a uniform honey yellow color. The faint impressed discoidal line of punctures of the elytra, which may be traced in all the species, is here more distinct than usual and runs along the second vitta.

17. H. inconspicuus, oblongus, postice subacutus, flavo-testaceus, subtiliter pubescens, thorace postice punctulato, basi nigricante, striola utrinque

brevi notata in elytris longius continuata, his piceis maculis duabus ad marginem obsolete testaceis, epipleuris flavo-testaceis, postpectore abdominisque basi piceis. Long. ·06.

Mas elytris confertim subtiliter punctatis nitidis; femina elytris alutaceo-strigosis opacis.

Louisiana; for this very interesting species I am indebted to my friend Dr. Schaum. The pubescence will distinguish it from the other species, having a basal stria common to the thorax and elytra. The sides of the thorax are slightly rounded, and form with the elytra a scarcely perceptible angle.

19. H. flavicollis, oblongo-ovatus, postice subacutus, flavo-testaceus, subtiliter pubescens, thorace subtiliter punctulato, margine basali nigricante, striola utrinque brevissima notato, in elytris haud continuata, his piceis, margine fasciis duabus (anteriore interrupta) apiceque testaceis. Long. ·05.

New York? given me by Mr. Willcox. The sides of the thorax are rounded, and form a moderately distinct, but very obtuse angle, with the elytra; the anterior fascia of the latter is one-third from the base, and consists of a marginal spot and a smaller discoidal one; the second band is at one-third from the tip, and is straight and regular, extending nearly to the suture; the elytra in the only two specimens seen are moderately shining, finely and very densely punctured, but probably vary according to sex.

20. H. 12-lineatus, appears allied to H. alpinus and other European species. The female resembles closely the figure of H. bidentatus (Aubé, Col. Eur. 5, pl. 28.) H. lævis *Kirby* appears to be the same, but he states that no punctures are visible on the upper surface of the body. In comparison with H. alpinus, our species is a little narrower, and the sides of the thorax are less curved anteriorly.

21. H. scitulus, oblongus, postice subacutus parum convexus, niger subnitidus glaber, capite thoraceque testaceis, punctulatis, punctis maioribus sparsis intermixtis, hoc versus latera utrinque impresso ad basin transversim subdepresso, margine apicali et basali nigricante, disco fasciis duabus subinterruptis extrorsum connexis ornato, elytris margine basali ad humeros dilatata, laterali lineolisque pluribus flavo-testaceis ornatis, parce punctatis, utrinque fortius biseriatim punctatis, pedibus piceo-testaceis. Long. ·13.

One specimen, Eagle Harbor, Lake Superior. Allied to H. septentrionalis of Europe, but more acute posteriorly, much darker colored above, more coarsely punctured, and with the two punctured lines of the elytra distinct. The thorax is broadly rounded on the sides, and forms a distinct angle with the elytra.

22. H. striatellus, varies in color from the black type, with indistinct testaceous elytral markings to dull muddy testaceous, with short lines on the elytra, two discoidal thoracic spots, and the sides of the head fuscous. The under surface is black, and the feet dull testaceous, with the posterior thighs dark. The impressed striæ of the elytra are four on each, and are usually deep, but are sometimes shallow, though always distinct. It is found at San Francisco and San Diego, in California, and at Santa Fe in New Mexico.

23. H. venustus, ovalis convexus, postice attenuatus, confertim subtiliter punctatus, pubescens, ferrugineus, clypeo ad apicem late truncato, lateribus obliquis, thorace versus angulos posticos vage impresso, elytris atris, ad medium paulo latioribus ad apicem oblique subtruncatis, margine fasciis duabus undulatis, maculaque versus apicem testaceis. Long. ·17.

One specimen from North Carolina given me by Mr. Zimmermann. Very distinct from all others by the hemi-hexagonal form of the clypeus, which is oblique each side, and truncate at the apex, with the angles well marked, and the edge very slightly reflexed. Head and thorax densely finely punctured; the latter slightly rounded and distinctly margined on the sides; posterior angles rectangular, broadly vaguely impressed; the sides make a very obtuse, not very perceptible angle with the elytra. These are black, densely punctured, finely pubescent, moderately convex, broadest about the middle, then narrowed to the apex, which is obliquely truncate; the whole margin, two undulated fasciæ not reaching to the suture, and an angulated spot at the apex (as in H. undulatus) yellow. Body beneath rufo-testaceous, coarsely densely punctured.

27. H. oppositus Say; ?*H. proximus* Aubé. The length given by Aubé is rather less than that of any specimen seen by me; the species is very similar to the preceding, and seems distinguished principally by the margin of the thorax being a little broader, with the anterior angles not porrected; the general form is more obtuse anteriorly, and the color is usually darker, so much so that the fasciæ of the elytra are at times hardly visible. The punctures of the elytra of the female are more distinct than in H. undulatus.

29. H. spurius, ovalis, postice magis attenuatus, ferrugineus, pubescens, capite subtiliter punctulato haud marginato, thorace confertim punctulato, margine basali nigricante, lateribus marginatis cum elytris angulum haud formantibus, his (maris) confertim subtilius punctatis striis versus suturam 2 vel 3 punctatis parum impressis; nigris, margine fasciis duabus undulatis, apiceque testaceis. Long. ·18.

One male, from Vermont, was kindly given me by Dr. Harris. This species closely resembles in form, sculpture and color, H. oppositus, but the epistoma is not margined. From H. sericeus it is distinguished by its less elliptical and less convex form, and by the large lateral spot behind the humerus not being produced so as nearly to unite the two yellow bands which are also in that species broken up into a series of linear spots hardly connected together. The male is also less finely punctured than the male of H. sericeus.

30. H. mixtus, longior ovalis, postice magis attenuatus, ferrugineus subtiliter parce pubescens, capite subtiliter punctulato, vix obsoletissime late marginato, thorace minus dense subtilius punctato, apice et basi vix nigricante, lateribus fortius marginatis, elytris parcius minus subtiliter punctatis stria suturali punctata, nigris margine fasciis undulatis duabus interruptis apiceque testaceis. Long. ·17.

One male from Nebraska. Longer and more pointed posteriorly than H. undulatus, with only a very faint transverse line representing the margin which in that species is quite distinct. The anterior angles of the thorax are not porrected, and the punctures of the elytra are larger and more distant.

32. H. semirufus, rufo-testaceus parum convexus ovalis postice attenuatus, confertissime subtiliter punctulatus, breviter pubescens, capite punctulato, thorace latius marginato, cum elytris angulum vix formante, his lineolis quatuor sutura margine basali macula postica alterisque duabus submarginalibus confluentibus nigris. Long. ·16.

Fort Laramie, Nebraska. The first of the lateral spots is placed about the middle, and is frequently not connected with the others; the second spot is about one-fourth from the apex, and internally is usually connected with the common sutural black spot near the apex. The four discoidal lines are more or less confluent, and are gradually shorter externally; the outer ones are connected with a short black basal margin.

33. H. lineolatus, longior ovalis, postice attenuatus, rufo-testaceus subtiliter pubescens, capite subtilissime, thorace subtiliter parce punctulato, hoc lateribus tenuiter marginatis, cum elytris angulum haud formantibus, margine basali nigricante, elytris subtiliter punctulatis, sutura vittisque angustis utrinque quatuor plus minusve confluentibus, maculisque externis duabus angustis nigris. Long. ·08.

Illinois; Mr. Willcox. The second and fourth black lines of the elytra reach the base; the first and third are abbreviated anteriorly; the two outer spots are narrow, as if formed by the interruption of a fifth line, of which a trace is sometimes seen on the humerus in the form of a dusky dot. Between the suture and first line is sometimes seen a very slender black line.

34. H. vittatus, ovalis, subconvexus, postice subattenuatus, rufo-testaceus parce pubescens, capite postice punctulato, thorace punctulato, apice et basi

nigricante, lateribus marginatis, cum elytris angulum haud formantibus, his punctulatis nigris, vittis duabus margine apiceque flavo-testaceis, vitta externa ad humerum cum margine confluente. Long. ·16.

Fort Laramie, Nebraska. The form of body is exactly that of H. undulatus, and the epistoma is very obsoletely transversely impressed, as in H. mixtus above mentioned, but cannot be said to be margined. The inner vitta of the elytra does not reach the base, but bends a little outwards at its extremity; towards the tip it is nearly confluent with the apical spot; the outer vitta commences at the humerus, where it is confluent with the margin, and ends at nearly one-fourth from the tip; in one specimen it is also confluent with the margin at its posterior extremity. The punctuation is alike in all the specimens seen, but it is quite likely that the females are more finely punctured, less shining and more pubescent.

35. H. vitiosus, ovalis, longior parum convexus, subtilissime punctulatus postice subattenuatus, subtiliter pubescens, niger, capite thoracisque lateribus obscure ferrugineis, hoc lateribus marginato, cum elytris angulum haud formante, his nigris margine angusto basali, fasciis undatis duabus interruptis (posteriore indistincta) margine laterali apiceque testaceis, pedibus rufis. Long. ·15.

One specimen from Illinois; Mr. Willcox. Of the same form as H. mixtus, from which it is distinguished by its black under surface. The bands of the elytra are placed as in H. undulatus and its allies, but are much interrupted, and of the posterior one only the lateral spot and a very small discoidal dot are visible; the basal margin is testaceous towards the scutellum. The dark red of the thorax fades imperceptibly into black, in such manner as to induce me to believe, that specimens will be found having a red thorax, with only the basal margin blackish. The males are probably more distinctly punctured.

41. H. niger. What I consider as Say's species resembles extremely in form, sculpture and color, H. punctatissimus, but is a little more obtuse anteriorly, and equally attenuated behind; it may be distinguished by the lateral margin of the thorax being hardly conspicuous, while in H. punctatissimus it is broad and thickened. The head is more finely punctulate, and the epistoma is not margined.

47. H. subtonsus, longior ovalis, parum convexus, parce pubescens, niger, ore rufescente, thorace lateribus vix marginatis rufescentibus cum elytris angulum obtusum formantibus, angulis posticis rectis, disco parce subtilius, ad basin et latera distinctius punctato, elytris sæpe testaceo-piceis, modice punctatis, pedibus rufo-testaceis. Long. ·125.

Lake Superior and Vermont. Resembles in appearance H. varians and H. puberulus, and likely to be confounded with them. H. varians is narrower and more oblong, the sides being almost parallel at the middle, and is entirely glabrous. H. puberulus has the posterior angles of the thorax obtuse and very distinctly impressed. The elytra of the female are less shining and less deeply punctured than those of the female.

53. H. collaris, piceo-testaceus, longior ellipticus parum convexus, glaber, thorace lateribus rotundatis fortiter marginatis cum elytris angulum obtusissimum formantibus, parce punctulato, grossius ad basin, elytris minus dense punctatis, punctis postice subtilioribus. Long. ·14.

Two specimens; Lake Superior. The usual discoidal row of punctures on the elytra is more distinct than usual towards the base of the elytra; the apical row of punctures on the thorax is likewise well marked.

55. H. concinnus, longior ovalis postice attenuatus, parum convexus, glaber, subtilissime punctulatus niger, capite, pedibus, ano, thoraceque ferrugineis, hoc ad apicem late ad basin anguste nigricante, lateribus tenuiter marginatis cum elytris angulum haud formantibus, his nigris, macula quadrata humerali, fasciis angulatis duabus, margine apiceque testaceis, stria suturali punctorumque serie dorsali distinctis. Long. ·14.

Fort Laramie, Nebraska. The first fascia proceeds from the middle of the humeral spot, runs obliquely inwards, and is dilated into a quadrilateral spot with elongated angles; the second fascia is just behind the middle, and is deeply emarginate anteriorly; neither attain the suture. The anterior black band of the thorax covers nearly half the surface. In one specimen nearly the whole abdomen is ferruginous.

56. H. pulcher, ovalis postice magis attenuatus, parum convexus, subtilissime punctulatus, glaber, ferrugineus, thorace antice late, ad basin anguste nigricante, lateribus tenuiter marginatis, elytris nigris macula humerali quadrata, fasciis angulatis duabus, margine apiceque rufo-testaceis, stria suturali nulla, serie punctorum dorsali parum distincta. Long. ·13.

One specimen from Alabama, collected by Mr. Hentz, was given me by Prof. Haldeman. The color and markings are almost as in the preceding; the body, however, is broader and more obtuse in front and more acute behind; the sutural stria is not visible, and the color beneath is ferruginous, though darker than the red of the feet, head and thorax.

58. H. difformis, longior, obconicus, glaber, ferrugineus, thorace obscuriore, disco subconvexo parce punctulato, distinctius ad latera et basin, lateribus marginatis cum elytris angulum haud formantibus, his minus dense punctatis, fuscescentibus ad basin pallidioribus. Long. ·25.

Mas antennarum articulis 4to late, 3io et 5to anguste dilatatis.

One immature specimen from Georgia. Resembles H. conoideus, but is larger, and the thorax would never become black. The punctures of the elytra are equal in size, while in H. conoideus two sizes are intermixed; the dilated third joint of the antennæ is also narrower than the fourth, while in the other species mentioned they are of equal breadth.

59. H. similis *Kirby*. This may be identical with the European H. picipes, but I have not been able to compare them. I must consider, however, that there are reasons why the following species should not be considered as H. lineellus of Europe, which is admitted to be a female variety of H. picipes.

60. H. picatus *Kirby*. Of this species I found both sexes at Mackinaw, and on the north shore of Lake Superior. The dull and finely punctured female hardly differs from the preceding, but the coarsely punctured male has no distinct elytral striæ. Otherwise there is no special difference.

62. H. turbidus, ovalis convexus, piceus, nitidus, capite pedibus thoraceque fere testaceis, hoc margine apicali et basali infuscato, elytris parum angustiore, lateribus obliquis rectis marginatis cum elytris angulum haud formantibus, antice parce punctulato, postice punctato, elytris modice punctatis, versus latera rufescentibus. Long. ·11.

One specimen from Massachusetts was given me by Mr. Zimmerman. Resembles in characters H. suturalis, but is broader and more convex, and the elytra are less densely punctured The color is more reddish, there is no discoidal spot on the thorax, and the suture of the elytra is not paler.

67. H. patruelis, longior ovalis parum convexus, nitidus subtus niger, antennis pedibus corporeque supra testaceus, fere æqualiter confertim punctatus, occipite, thoracis basi apice et medio, elytrisque postice sæpe subinfuscatis, thorace elytris conspicue angustiore, lateribus obliquis rectis anguste marginatis cum elytris angulum formantibus. Long. ·15.

Fort Laramie, Nebraska Similar in form to the Californian H. lutescens, but less convex, lighter colored, and with the sides of the thorax a little longer and almost entirely straight, and the elytra more coarsely punctured.

69. H. nubilus, longior ovalis, parum convexus, nitidus, subtus niger, antennis pedibus corporeque supra testaceus, æqualiter subtile dense punctatus, elytris lineis quatuor pone medium confusis nigro-piceis signatis. Long. ·17.

Fort Laramie; found also in Illinois by Mr. Willcox. Still longer than H. patruelis, and more finely and densely punctured. The head and thorax are never clouded; the vittæ of the elytra are sometimes reduced to merely a confused cloud behind the middle; at other times they are visible nearly to the base; in the latter case the first and third are a little shorter anteriorly, and the third and fourth are interrupted before the middle. In some there is a slight remnant of an interrupted submarginal stripe. The thorax is formed as in H. patruelis, and is sometimes marked with a central fuscous dot.

70. H. discoideus, latior ovalis fere depressus (minus nitidus) subtus niger, antennis pedibus corporeque supra testaceus, capite lateribus et occipite infuscato; thorace elytris angustiore macula magna basali infuscato, lateribus late rotundatis tenuiter marginatis cum elytris angulum formantibus, elytris confertissime punctulatis disco maximo communi infuscatis, sutura lineolisque anticis paucis pallidioribus, margine late testaceo relicto. Long. ·15.

One female found at Fort Laramie. Broader and flatter than the allied species, and (in case the male should be more shining and more coarsely punctured) distinguished by the large basal spot of the thorax. The head and thorax are moderately punctured; the dark portion of the elytra is very well defined, and does not fade at all into the broad pale margin.

73. H. mellitus, subovatus convexus postice attenuatus, flavo-testaceus subtiliter pubescens, capite punctulato epistomate late emarginato, thorace subtiliter punctato lateribus tenuissime marginatis late rotundatis cum elytris angulum haud formantibus, his sat dense subtiliter punctatis, piceis, margine, lineolis ad basin maculis lateralibus duabus alteraque subapicali pallidis. Long. ·09.

One specimen from Vermont, collected by the late Prof. C. B. Adams. By the form of the epistoma it resembles H. hybridus, but is much smaller and more ovate in form, while the spots of the elytra do not form transverse fasciæ, though those that remain are referable to that style of marking.

Synopsis of the LATHRIDIIDES *of the United States, and northern contiguous Territories.*

By JOHN L. LE CONTE, M. D.

CORTICARIA Marsham.

A. Antennæ articulis 9 et 10 subæqualibus. Sp. 1—26.

1. C. grossa, fusco-testacea, longe parce cinereo-pilosa, thorace fere rotundato, capite vix latiore parce punctato, lateribus 7- vel 8-dentatis, ad basin late foveato, elytris elongato-ovalibus convexis, thorace duplo latioribus grosse vix ordinate punctatis, stria suturali postice distincta. Long. ·11.

One specimen found at the edge of a salt marsh, near Cambridge, Mass. in May. Readily distinguished from all others here described by its large size and coarse almost irregularly disposed punctures.

2. C. serricollis, elongata parum convexa picea, parce breviter cinereo-pubescens, thorace rotundato-cordato lateribus minus subtiliter serratis, confertim punctato ad basin fovea rotunda impressa transversim vage extensa; elytris oblongo-ovalibus, elongatis, thorace paulo latioribus seriatim punctatis interstitiis punctis uniseriatis minoribus notatis: antennis basi fusco-testaceis. Long. ·10.

Lake Superior, two specimens: very similar in all its characters to the next, and only distinguished by the narrower elytra, and wider and less convex thorax: the latter is somewhat less densely punctured, but the basal fovea is obsoletely prolonged each side. As in the four next species the striæ of the elytra are hardly impressed, their punctures are very distinct anteriorly, but grow small towards the tip, till they are hardly larger than the intervening rows of small points. The head just behind the eye is armed each side with an obtuse not very distinct tubercle.

3. C. **dentigera** elongata, parum convexa picea, parce cinereo-pubescens, thorace rotundato-cordato, lateribus subtilius serratis, confertim punctato ad basin fovea rotundata transversim obsolete expansa impresso, elytris elongato-oblongis thorace sesqui latioribus, seriatim punctatis interstitiis uniseriatim subtiliter punctulatis antennarum basi pedibusque obscure testaceis. Long. ·08.

Lake Superior: behind each eye there is a slight but more distinct and subacute tooth, from which proceeds a rigid recurved bristle.

4. C. **prionodera**, elongata, parum convexa, testacea parce cinereo-pubescens, thorace rotundato-cordato, dense punctato, lateribus minus subtiliter serratis, ad basin obsolete foveato, elytris oblongis, thorace paulo latioribus, distinctius seriatim rugose-punctatis, interstitiis uniseriatim punctulatis. Long. ·07.

One specimen found at San Jose, California, Related to the two preceding species, but the punctures of the elytra are larger and somewhat connected by transverse rugæ. The lateral teeth of the thorax are more conspicuous, and the basal fovea is faint: the head is about equal in width to the thorax, and has behind each eye a scarcely distinct obtuse tooth.

5. C. **rugulosa**, elongata parum convexa picea, parce breviter cinereo-pubescens, thorace subquadrato, latitudine vix breviore, lateribus et basi late rotundato, confertim punctulato, ad basin vage foveato, angulis posticis obtusis, elytris thorace haud sesqui latioribus oblongo-ovalibus,tenuiter seriatim punctatis interstitiis transversim rugosis punctulatis, pedibus antennisque flavis, his clava fusca. Long. ·05.

Lake Superior: the sides of the thorax are smooth anteriorly, but have a few small teeth near the posterior angles, which though obtuse are quite distinct. It is distinguished from the next principally by the thorax being very little broader than its length: the thorax varies in color becoming sometimes almost rufous.

6. C. **Kirbyi**, picea vel testacea, subelongata parum convexa, breviter cinereo-pubescens, thorace latitudine fere sesqui breviore, subquadrato lateribus serratis parum rotundato, angulis posticis obtusis prominulis, basi late rotundata, confertim subtiliter punctato ad basin vage foveato; elytris oblongo-ovalibus, thorace haud sesqui latioribus, seriatim punctatis, interstitiis punctulatis transversim subrugosis; antennis pedibusque flavo-testaceis. Long. ·04—·06.

Corticaria denticulata || Kirby, Fauna Bor. Am. 110.

Lake Superior, very abundant: the serrations of the thorax are less conspicuous towards the anterior angles. I do not feel certain that the former species should be separated from this: I can find no difference except the relative proportions of the thorax, and as both are found in one locality and mingled together, it is quite possible that they are really different sexes of one species; in which case the name appended to the present description must for obvious reasons be retained.

7. C. **obtusa**, picea, parum convexa, breviter pubescens, thorace latitudine fere sesqui breviore subquadrato, lateribus subtilissime serrulatis rotundatis, basi late rotundata, angulis posticis obtusis, confertim punctulato, ad basin arcuatim impresso elytris thorace haud sesqui latioribus oblongo-ovalibus, seriatim punctatis, interstitiis punctulatis transversim rugosis; antennis pedibusque testaceis. Long. ·05—·06.

One specimen found at New York and another at Cambridge, Massachusetts; resembles in form the preceding, but is a little broader, and is readily known by the form and sculpture of the thorax.

8. C. **longipennis**, elongata, cinereo-pubescens, testacea, thorace latitudine sesqui breviore lateribus antice rotundatis, basi late rotundata utrinque sinuata, angulis posticis prominulis, parce punctulato, ad basin fovea parva transversa impresso; elytris elongatis, oblongis, thorace paulo latioribus postice convexis ad apicem late truncatis, punctis quadratis approximatis striatis, interstitiis parum convexis seriatim breviter pilosis. Long. ·05.

Mas elytris abdomine multo longioribus.

Femina elytris abdomine parum longioribus, minus subito truncatis.

Cambridge, Massachusetts; in salt marsh. Very distinct by the long elytra being broadly truncate at tip, with the outer angle rounded.

9. C. scissa, elongata, testacea cinereo-pubescens, thorace latitudine plus sesqui breviore, lateribus antice valde rotundatis, basi late rotundata, utrinque sinuata, angulis posticis prominulis, sat dense punctulato, ad basin leviter foveato, elytris elongatis oblongis, thorace paulo latioribus, postice convexis ad apicem rotundatim modice truncatis, punctis quadratis approximatis seriatis, interstitiis parum convexis seriatim breviter pilosis. Long. ·045.

One female found near the mouth of the Colorado River, California. Closely related to the preceding, but the thorax is broader and more densely punctured : the general form is less elongated.

10. C. americana, picea vel rufo-testacea, oblongo-ovata, thorace latitudine fere sesqui breviore, subquadrato, lateribus antice rotundatis, basi late rotundata, angulis posticis obtusis, parce punctulato, ad basin arcuatim impresso, elytris ovalibus modice convexis subtilius seriatim brevissime pilosis. Long. ·04.

Mannerheim, Germ. Zeitschr. 5, 50.

Middle and Southern States; abundant.

11. C. expansa, longiuscula, rufo-testacea, thorace latitudine sesqui breviore, lateribus subtiliter serrulatis rotundatis, basi late rotundata, angulis posticis obtusis fere rotundatis, confertim punctulato, ad basin transversim foveato, et utrinque ad latera modice explanata, elytris oblongo-ovalibus thorace haud sesqui latioribus, modice seriatim punctatis, interstitiis seriatim breviter pilosis. Long. ·06.

California, at San Diego. The lateral impression of the thorax is very near the margin and extends from the middle to the base.

12. C. tenella, longiuscula, fusco-ferruginea, vel picea, thorace latitudine subbreviore, lateribus rotundatis subserratis, basi late rotundata, angulis posticis obtusis haud prominulis, confertim punctulato, ad basin transversim foveato, et utrinque ad latera sat profunde impresso, elytris elongato-ovalibus, thorace haud sesqui latioribus, tenuiter seriatim punctatis, interstitiis breviter seriatim pilosis. Long. ·04.

San Jose, California. By its sculpture this species seems related to C. pusilla *Mann.* (Germ. Zeitschr. 5, 48) but the form is elongate, and the elytra are not truncate at tip.

13. C. compta, longiuscula picea, thorace latitudine fere sesqui breviore, lateribus antice rotundatis, basi late rotundata, angulis posticis prominulis, rude punctato, ad basin fovea transversa impresso, elytris ovalibus convexis, thorace haud sesqui latioribus, punctis quadratis seriatis, interstitiis concinne breviter seriatim pilosis. Long. ·045.

One specimen, San Diego, California. From the next species, to which it is allied, this is distinguished by the broader thorax, and dark colored feet.

14. C. grata, longiuscula, gracilis, thorace latitudine subbreviore, lateribus rotundatis vix serratis, basi late rotundata, angulis posticis prominulis, rude punctato ad basin fovea transversa impresso, elytris ovalibus convexis, thorace fere sesqui latioribus punctis quadratis seriatis, interstitiis concinne breviter seriatim pilosis; antennarum basi pedibusque rufo-testaceis. Long. ·045.

One specimen, Lake Superior; from the next two species this is distinguished by the form and coarser punctuation of the thorax. As in C. compta, and in the next two, the beautifully regular arrangement of the hairs on the elytra causes the interstices between the striæ of quadrate punctures to appear in some lights very finely carinated.

15. C. angularis, longiuscula picea, thorace latitudine breviore, lateribus rotundatis, postice subsinuatis, basi vix late rotundata, angulis posticis prominulis, modice punctato ad basin fovea rotundata impresso, elytris

thorace latioribus ovalibus convexis punctis quadratis seriatis, interstitiis concinne seriatim pilosis; antennarum basi pedibusque rufo-testaceis. Long. ·05.

Lake Superior, one specimen. Differs from the next by its more elongated form.

16. C. cavicolis, breviuscula, rufo-picea, vel testacea, thorace latitudine sesqui breviore, lateribus valde rotundatis, postice subsinuatis, basi late rotundata, utrinque ad angulum breviter sinuata, angulis posticis magis prominulis, modice punctato, ad basin fovea subtransversa impresso, elytris thorace fere sesqui latioribus, punctis quadratis seriatis, interstitiis concinne seriatim pilosis; antennarum basi pedibusque testaceis. Long. ·04.

Mannerheim, Germ. Zeitschr. 5, 57.

Middle, Southern and Western States, not rare. Distinguished from the allied species by the broader form, and by the greater magnitude of the posterior angles of the thorax.

17. C. regularis, longiuscula, nigro-picea, thorace quadrato, latitudine paulo breviore, lateribus subcrenulatis antice rotundatis, basi late rotundata, angulis posticis rectis prominulis, modice punctato, postice minus profunde arcuatim impresso, elytris thorace sesqui latioribus convexis ovalibus, punctis quadratis seriatis, interstitiis concinne seriatim pilosis; antennarum basi pedibusque flavo-testaceis. Long. ·06.

One specimen found in Pennsylvania.

18. C. levis, longiuscula (testacea), thorace subquadrato, latitudine fere sesqui breviore, lateribus rotundatis, basi late rotundata, angulis posticis subrectis, parce punctato, ad basin fovea transversa leviter impresso, elytris thorace latioribus, ovalibus convexis, subtiliter seriatim punctatis, interstitiis breviter seriatim pilosis. Long. ·04.

One specimen found at the Colorado River, in California. Related to C. cavicollis, but the posterior angles of the thorax are less prominent, the basal fovea is less deep, and the general form is narrower; the rows of punctures of the elytra are finer, and the interstices appear less convex and less rugous.

19. C. herbivagans, nigro-picea, longiuscula, thorace subrotundato, latitudine vix breviore, lateribus subcrenulatis, angulis posticis fere rotundatis, confertim punctato, postice tranversim arcuatim impresso, elytris ovalibus convexis, thorace haud sesqui latioribus, punctis maioribus quadratis seriatis, interstitiis seriatim concinne pilosis, antice subelevatis; pedibus paulo pallidioribus. Long. ·04.

San Francisco, California, very abundant on flowers in May.

20. C. morsa, fusco-testacea, sericeo-pubescens longiuscula, thorace latitudine vix breviore, sub-hexagono, lateribus medio angulatis, dein usque ad basin subconcavis, basi fere truncata, angulis posticis rectis, confertim punctulato, postice transversim profunde arcuatim impresso, elytris ovalibus, convexis, thorace latioribus punctis quadratis seriatis, concinne seriatim pilosis. Long. ·04.

One specimen found at the Colorado River, in California. The general proportions are very much as in C. pumila, but the thorax is very distinctly angulated at the middle on the sides.

21. C. pumila, fusca vel testacea, longiuscula, thorace latitudine vix breviore, subcordato, lateribus crenulatis, medio subangulatis, angulis posticis obtusis, basi late rotundata, sat punctato, postice arcuatim impresso, elytris ovalibus paulo convexis, thorace latioribus, subtilius striato-punctatis, interstitiis lævibus seriatim pilosis. Long. ·05.

Melsheimer, Catalogue of Described Col. 46, (synon. excl.)

Corticaria pusilla||Mels. Proc. Acad. Nat. Sc. 2, 114.

Lake Superior, Massachusetts, Pennsylvania, Illinois, Georgia; abundant. Although the interstices of the elytra are furnished each with a row of short hairs, they appear entirely smooth, having neither rugæ nor punctures.

22. C. rufula, elongata, parum convexa rufo-testacea, thorace latitudine breviore lateribus rotundatis basi late rotundatis, angulis posticis obtusis, confertim punctato, postice arcuatim impresso, elytris elongato-ovalibus seriatim punctatis, interstitiis lævibus seriatim longius pilosis. Long. ·06.

San Jose and San Diego, California: this species recalls by its form C. serricollis, &c., among those just described, but the sides of the thorax are not serrate, and the sculpture of the elytra is very different.

Species unknown to me.

23. C. octodentata Mann. Germ. Zeitschr. 5, 65. *Latridius octodentatus* Say, Jour. Acad. Nat. Sc., 5, 325. Nebraska Territory.

24. C. pusilla Mann. Germ. Zeitschr. 5, 48 (excl. synon.) California.

25. C. trisignata Mann. Bull. Mosc. 1852, 361. Russian America.

26. C. spinulosa Mann. Bull. Mosc. 1852, 361. Russian America.

B. Antennæ articulis 9—11 sensim maioribus.

27. C. picta, elongata testacea glabra, thorace latitudine breviore subquadrato, angulis rotundatis, parce punctulato haud impresso, elytris thorace latioribus oblongo-ovalibus subtiliter seriatim punctulatis, interstitiis omnium subtilissime alutaceis, fascia transversa ad medium apiceque piceis, antennarum articulis tribus ultimis piceis. Long. ·05.

Middle and Southern States: rare. Varies in having the elytra piceous, with two large testaceous rounded spots on each, one behind the base and the other behind the middle. The 9th joint of the antennæ is hardly larger than the 8th, which, together with the absence of pubescence, gives to the insect a peculiar appearance, and suggests even the establishment of a separate genus for its reception.

In the next species, however, the external appearance of the ordinary species of Corticaria is resumed, though the antennæ are as in the present one.

28. C. simplex, longiuscula testacea, tenuiter pubescens, thorace latitudine breviore subquadrato, angulis rotundatis, parce punctulato, postice obsolete transversim impresso, elytris oblongo-ovalibus, tenuiter seriatim punctulatis et breviter seriatim pilosis. Long. ·05.

One specimen found at the Colorado River in California. The hairs of the elytra are precisely as in the many species of the division A, but the punctures of the normal striæ are very small, hardly larger, in fact, than those of the interstices. The elytra and the club of the antennæ are somewhat fuscous.

LATHRIDIUS Herbst.

A. Antennæ articulo 9no 8vo maiore: (thorax bicarinatus).

1. L. sculptilis, elongatus, opacus rufo-testaceus, thorace latitudine longiore, pone medium maxime constricto, antice trifoveato dorso subtiliter bicarinato, carinis integris fere parallelis, antice utrinque carinula brevi externa notato, elytris thorace sesqui latioribus punctis quadratis, postice minoribus seriatis, interstitiis utrinque tribus paulo elevatis subcarinatis. Long. ·045.

Southern Illinois, Prof. Haldeman. Seems related to L. carinatus and other European and Siberian species, but the small anterior elevated line outside of the dorsal carinæ is not mentioned in any of the descriptions; it runs from the large external anterior fovea to the posterior constriction, and though fine is quite distinct; the two dorsal carinæ are parallel anteriorly, and between them is seen an oval fovea: towards the base they converge, and are continued through the transverse impression.

B. Antennæ articulis 8 et 9 subæqualibus.

* Thorax bicarinatus.

2. L. costicollis, testaceo-piceus, capite thoraceque fere scabris, illo canaliculato latitudine parum longiore, lateribus concavis, postice constricto

angulis anticis magnis rotundatis, ante medium transversim impresso, dorso late et profunde sulcato, bicostato, costis integris parallelis, elytris ventricosis postice acutis, pone basin oblique impressis, humeris valde elevatis, crenato-striatis, interstitiis lævibus convexis. Long. ·07.

One specimen found at San Francisco; the eyes are moderate and prominent, as in the next division; the great elevation of the humeri causes the lateral outline of the elytra to be sinuous anteriorly. It is somewhat related to, but very distinct from L. angusticolis of Europe.

** Thorax haud carinatus.

† Oculi mediocres, convexi prominuli.

3. L. pulicarius, ferrugineus, elongatus, capite thoraceque fere scabris punctatis, hoc latitudine paulo longiore convexo, lateribus antice rotundatis, postice profunde transversim sulcato modice constricto, elytris nigris, vel nigro-piceis, ovalibus valde marginatis thorace duplo latioribus, confertim seriatim grosse punctatis. Long. ·035.

Lec. Melsheimer's Cat. of Described Coleoptera, 46.

Corticaria pulicaria Melsheimer, Proc. Acad. Nat. Sc. 2, 115.

Middle and Southern States: sometimes very abundant, flying at twilight. Very similar to the European L. lilliputanus.

4. L. crenatus, niger, capite thoraceque obsolete canaliculatis scabris, hoc quadrato postice subangustato, parum convexo, fortius marginato, lateribus fere rectis antice paulo rotundatis, versus basin trifoveato, foveis sulco transverso connexis, elytris ovalibus convexis, thorace duplo latioribus grosse crenato-striatis, interstitiis striis haud latioribus, antennis pedibusque flavis. Long. ·045.

Several specimens found at San Jose, California, and one at San Diego. Smaller than the next, with deeper striæ on the elytra, and narrower margin. The posterior impression of the thorax is deeper at the sides and in the middle, so that it appears like three foveæ transversely connected.

5. L. reflexus, niger, capite thoraceque scabris canaliculatis, hoc quadrato, postice subangustato, parum convexo, fortius marginato, lateribus fere rectis antice rotundatis, postice transversim valde impresso, elytris ovalibus modice convexis, thorace duplo latioribus, valde marginatis profunde crenato-striatis, interstitiis striis latioribus, antennis pedibusque flavis. Long. ·055.

New York, Illinois, Lake Superior.

† † Oculi minuti superni.

6. L. filiformis, linearis, depressus, rufo-ferrugineus, occipite coarctato, thorace quadrato-cordato, late marginato, postice modice angustato, impressione transversa postica utrinque exarata, elytris thorace vix latioribus dense crenato-striatis. Long. .045.

Dahl, Coleopt. 65, &c., &c. Mann. Germ. Zeitschr. 5, 104.

A European species, of which one specimen was found in Missouri and another at the Academy of Natural Sciences, in Philadelphia. Probably imported in articles of commerce.

7. L. parviceps, elongatus depressus, ferrugineus, capite thorace duplo angustiore, fronte subtiliter trisulcato, thorace latitudine breviore, lateribus antice rotundatis, postice haud angustato, angulis posticis rectis, valde marginato, disco antice trifoveato, postice transversim valde sulcato, elytris medio paulo dilatatis, sexseriatim variolosis, interstitiis perangustis, humeris denticulatis. Long. ·045.

A very distinct species of which I found but a single specimen, at San Jose, in California. The antennæ are shorter than in any of the preceding species, being hardly twice as long as the head.

Species unknown to me.

8. L. **quadricollis** Mann. Bull. Mosc. 1843, 299.	Germ. Zeitschr.	5, 70.
9. L. **protensicolis** Mann. ibid.	ibid.	5, 71.
10. L. **cordicollis** Mann. ibid. 300,	ibid.	5, 105.

11. L. **sobrinus** Mann. Bull Mosc. 1852, 362. All from Russian America.

MONOTOMA Herbst.

1. M. **productum**, elongatum atrum opacum, parce albo-pubescens, capite pone oculos haud dentato, thorace confertissime grosse punctato, latitudine longiore, antrorsum paulo angustato, lateribus rectis subcrenatis, angulis posticis acutis, ad basin vage impresso, elytris punctatis rugosis substriatis, interstitiis angustis distinctis; pedibus nigro-piceis, antennis ferrugineis. Long. ·10.

New York. Larger than the following, and quite distinct.

2. M. **fulvipes**, elongatum atrum opacum, parce pubescens, capite profunde impresso pone oculos dente acuto armato, thorace confluenter rugose punctato, latitudine longiore, lateribus crenatis late rotundato, angulis posticis obtusis, anticis rotundatis productis, ad basin obsolete bifoveato, elytris piceis scabro-punctatis, rugosis minus distincte striatis, antennis pedibusque ferrugineis. Long. ·08.

Melsheimer, Proc. Acad. Nat. Sc. 2, 111.

Monotoma opaca Ziegler, ibid. 2, 271.

Pennsylvania Dr. Melsheimer. Distinct from the next species by the more elongated thorax, with produced anterior angles and fainter dorsal foveæ.

3. M. **foveatum**, elongatum atrum opacum, parce pubescens, capite profunde impresso pone oculos dente armato, thorace latitudine parum longiore, antice subangustato, lateribus crenatis vix late rotundatis, angulis posticis subobtusis anticis prominulis subrotundatis, confluenter rugose punctato, ad basin fortius bifoveato, elytris piceis minus profunde scabro-punctatis, substriatis, antennis pedibusque ferrugineis. Long. .06.

Ohio, Mr. Wapler, two specimens.

4. M **americanum**, atrum, minus elongatum, opacum, parce pubescens, capite leviter impresso, pone oculos obtuse dentato, thorace latitudine fere breviore, antrorsum angustato, lateribus rectis crenatis, angulis posticis subacutis, antice vix rotundatis, antennis pedibusque ferrugineis. Long. ·07·

Aubé, Ann. Ent. Fr. 6, 461, tab.

One specimen, Lancaster Co., Pennsylvania.

5. M. **parallelum**, atrum elongatum, opacum, fusco-pubescens, capite leviter impresso, pone oculos obtuse dentato, thorace latitudine paulo longiore, lateribus parallelis fere rectis crenulatis, angulis posticis rectis, anticis subprominulis, confluenter rugosé-punctato, ad basin transversim vage foveato, elytris piceis minus profunde punctatis seriatim pilosis, antennis pedibusque ferrugineis. Long. ·08.

One specimen, New York. The striæ of the elytra are hardly impressed, as in the preceding species, but seem only indicated by the rows of short bristles, which, as in others, occupy the interstices.

6. M. **mucidum**, atrum, elongatum, opacum, fusco-pubescens, capite modice impresso, pone oculos obtuse dentato, thorace latitudine paulo longiore, antrorsum vix conspicue angustatum, lateribus crenulatis vix late rotundatis, angulis anticis subprominulis, posticis obtusis, minus profunde rugose-punctato, postice vage transversim foveato, elytris minus profunde punctatis seriatim pilosis, antennis pedibusque ferrugineis. Long. ·055.

One specimen found at the Colorado River in California. Closely resembles in its characters the preceding, but is smaller and has the sides of the thorax less parallel.

Notes derived from observations made on the Birds of New Mexico during the years 1853 *and* 1854.

By T. Charlton Henry, M.D., U. S. Army.

The following observations were made by the writer, on the Ornithology of that portion of New Mexico lying south and north-west of the Jornada del Muerto, a portion of country differing very essentially from that situated in the vicinity of Santa Fe. In special, or nearly special, reference to the Ornithology of the latter, it will be recollected that Col. McCall, late Inspector General, U. S. Army, published, somewhat more than two years ago, in the Proceedings of the Philadelphia Academy of Natural Sciences, an interesting and able article. It will be observed that the writer in the present case, having devoted his entire leisure to his favorite pursuit for a period of more than two years, while stationed at Forts Fillmore, Webster and Thorn, each in turn, has succeeded in adding largely to the list published by Col. McCall, as above referred to.

A word relative to the topography of the several locations where the observations were made.

Fort Fillmore is situated on the eastern bank of the Rio Grande, south of Santa Fe two hundred and seventy-five miles, its level above the sea being several thousand feet less than the latter place. Small mesquit and cotton-wood, with more or less " tornilla," is the principal wood to be met with in its locality. The soil is sandy, except in the bottom land, where alluvial deposit exists to a certain extent, of argillaceous character, and black loam. Fifteen miles north-east of the Fort are the Organ Mountains, but no investigations was the writer able to make there during the four months he was stationed at Fort Fillmore ; the size of the garrison, to which he was Post Surgeon, precluding the practicability of his absenting himself therefrom for any length of time. August, September, October, November and part of December, were passed at Fort F. The writer was then ordered to Fort Webster, near the Sierra de los Mimbres and near the copper mines, the post being built on the banks of the Rio de los Mimbres (River of Willows) a small, rocky and beautifully clear stream.

This location was in the very heart of the mountain; the ground very elevated, and the soil along the stream exceedingly rich, being much of it black muck, with scarce a particle of clay in its composition. On the upland, where grew in profusion the nutritious " gamma grass," a limestone base was covered lightly with vegetable deposit. The face of the country was plains, narrow valleys and high mountains, alternately.

The timber consisted of white cedar, (Juniperus albus,) pinon, (Pinus monophyllus,) white pine, (P. altissimus,) scrub oak, (Q. olivæformis,) and black walnut, among the mountains; along the brook, cotton wood, white water ash and box alder, the latter rather sparse. The geological character of the mountains is principally limestone, associated with traces of iron and lead, and silver not unfrequently found in combination. Spar, unlike the composition of the Organ Mountain range near Fort Fillmore, very little or none. Copper also, in the form of carbonate, abounds in the vicinity; also, as usual, associated with a cretaceous base; black volcanic rock, to a small extent, is to be met with.

At Fort Webster the writer passed more than a year, when he was removed to Fort Thorn, situated on the Rio Grande, some fifty miles above Fort Fillmore. Soil, timber, &c., are all similar to that found about Fort Fillmore, with a slight difference only in temperature.

With these few preliminaries, which the writer deems of some service, as bearing in a measure upon the character of the haunts frequented by certain birds, many species of which, in this region, although found in great abundance in one locality, yet in another, a few miles only distant, are never met with, he will proceed to note every bird actually met with, during nearly three years sojourn in New Mexico, of which he has, in most every instance, procured specimens.

CATHARTES.

1. C. aura. Common during the summer months, especially along the Rio Grande; among the mountains fewer. In winter rarely seen. Most abundant in the spring and fall.

BUTEO.

2. B. borealis. Breeds rather abundantly; common everywhere. Numerous specimens obtained.

3. B. Pennsylvanicus. Rarely met with. One near Fort Fillmore shot in September.

4. B. lagopus. Not rare. Several specimens obtained. Feed much upon mallards and other ducks. Observed only once on the Rio Mimbres; not unfrequently shot while duck hunting along the Del Norte.

HALIÆTUS.

5. H. leucocephalus. But two or three pair seen at Forts Fillmore and Thorn, during the winter only. One young male in brown plumage obtained at Fort Webster; the only one seen there.

PANDION.

6. P. haliætus. Two or three seen at each station; one shot. Apparently not numerous. The muddiness of the Rio Grande, and the small size of the few clear streams found in the country, will probably account for it; in the first case their prey being not readily seen from above; in the second, the few fish found being very small.

FALCO.

7. F. columbarius. Occasionally seen only; numerous nowhere. One obtained at Fort Webster.

8. F. sparverius. Common everywhere. Resident.

ASTUR.

9. A. Cooperi. One shot near Fort Webster; no other observed.

10. A. fuscus. Common among the mountains; very rarely seen elsewhere. Several obtained.

CIRCUS.

11. C. cyaneus. Extremely common everywhere. Prey much upon the partridges (L. Gambelli) and also ducks.

SURNIA.

12. S. hypogœa. A few observed upon portions of the Jornada del Muerto.

OTUS.

13. O. vulgaris. Quite common in the fall along the Del Norte. Observed among the mountains but twice.

BUBO.

14. B. Virginianus. Common in both localities. One shot very nearly white.

CHORDEILES.

15 C. Virginianus. Very common everywhere from April to July; makes its first appearance in the latter part of March.

CAPRIMULGUS.

16. C. Nuttallii. Found both along the Rio Grande and Mimbres; much more common at the latter place. Arrives and migrates in the latter part of October.

HIRUNDO.

17. H. PURPUREA. Not very common. Observed only at Fort Webster. Arrives about the middle of April and remains about two months only.

18. H. BICOLOR. Very common throughout New Mexico. Arrives about the 10th of April, and migrates about the last of August.

19. H. THALASSINA. Common, more particularly along the Mimbres. Arrives early in April, and leaves by the 5th of August.

20. H. RUFA. Quite common along the Rio Grande. Time of arrival a few days later than H. fulva; migrates about August 15th. A few only seen on the Mimbres.

21. H FULVA. Observed only at the Mimbres. Not numerous. Arrives the last of March and migrates the last of July.

22. H. RIPARIA. Common both in the Valley of the Del Norte and among the mountains. Arrives soon after H. thalassina, and migrates somewhat later.

MUSCICAPA.

23. M. VERTICALIS. Found in abundance among the mountains. Arrives at Fort Webster March 25th, and leaves about the 20th of August. Never seen along the Valley of the Rio Grande.

24. M SAYA. Seems to take the place of the Verticalis along the Rio Grande. Common at Forts Fillmore and Thorn. Arrives the 1st of February, and is not seen after the 25th of July, unless very rarely; one seen in January.

25. M. NIGRICANS. Rather common among the mountains. Occasionally seen along the Del Norte. Always affects the neighborhood of streams. Arrives 31st of March; not observed after the 20th of July.

26. M. PUSILLA. Not rare along the mountain streams; often observed at Fort Webster. Arrives late in May, and migrates the last of July.

PYROCEPHALUS.

27. P. RUBINEUS. One shot in May at Fort Webster; the only specimen met with; a male in full plumage.

PTILOGONYS.

28. P. TOWNSENDII. Very abundant during the winter months only, about Fort Webster, where they always frequent the neighborhood of cedar trees and feed on their berries. Arrive in October in considerable flocks, and soon separate into pairs or threes; migrate the last of March. They appear to possess no power of song, although in March they frequently utter a peculiar note, very short and interrupted. Their call note may well be compared to the slight creaking of an ungreased carriage wheel. Their call note differs from their attempts at singing in spring. Seem very retiring, and are usually met with in shady glens near a stream where cedars abound.

They do not nest in the neighborhood of the Mimbres, nor do they migrate in the spring in flocks, as far as I can ascertain. Never met with along the valley of the Rio Grande.

29. P. NITENS. Three or four pair observed about Fort Webster, and shot in June, 1853. First observed May 25th; none seen after July. Not seen on the Rio Grande. Nest on the Mimbres.

TOXOSTOMA.

30. T. REDIVIVA. Found rather abundantly about Fort Fillmore. Frequents the mesquit exclusively. More observed during the months of October and November than during the summer. A few seen during the month of August. Am unable to say whether it breeds here. Rarely seen after December. Two or three seen at Fort Thorn during December 1853. Never observed on the Rio de los Mimbres.

CULICIVORA.

31. C. CŒRULEA. Rare throughout the country. A few seen at the Mimbres during the month of April; first observed on the 12th of that month. Probably does not breed here.

SYLVICOLA.

32. S. CORONATA. Very abundant everywhere during the months of April and October. First observed at the Mimbres, April 2d.

33. S. STRIATA. One or two only observed in April at the Mimbres.

34. S. CŒRULEA. One observed at the Mimbres during the latter part of April.

35. S. ÆSTIVA. Common throughout the country in summer. Arrives in the early part of April, and migrates southward the latter part of July.

36. S. NIGRICANS. One shot May 10th on the Mimbres, the only one observed at any time.

37. S. CANADENSIS. A few observed on the Mimbres, and one along the Rio Grande near Fort Thorn, in May.

TRICHAS.

38. T. TOLMIEI. Breeds about the mountains along the Rio Mimbres. Never seen in the valley of the Rio Grande. Three specimens obtained.

39. T. MARILANDICA. Very common along the Mimbres, where it breeds; in less numbers along the valley of the Rio Grande. Arrives about the 1st of April and disappears the latter part of July.

HELINAIA.

40. H. CHRYSOPTERA. One only seen near Fort Thorn in April, 1854.

CERTHIA.

41. C. FAMILIARIS. Very common among the mountains in summer, where it probably breeds. Never seen, except in winter, along the valley of the Rio Grande.

TROGLODYTES.

42. T. OBSOLETUS. Very common among the mountains in summer, where it breeds. Not seen on the Rio Grande. Arrives at Fort Webster by the 15th of March, and disappears the last of July.

43. T. AMERICANUS. Occasionally seen only in winter and late in fall. Two or three obtained at the Mimbres and Fort Fillmore.

44. T. PALUSTRIS. Very common in summer everywhere, but most abundant along the small mountain streams where there are marshy shores. Breeds in the territory. Many winter along the Rio Grande.

PARUS.

45. P. MINIMUS. Common among the mountains. Resident. Not met with along the river.

46. P. BICOLOR. Common in winter among the mountains. Not on the Rio Grande.

47. P. WOLLWEBERI. One only seen; shot on the 10th of May, at Fort Webster.

REGULUS.

48. R. SATRAPA. Common along the Sierra de los Mimbres. Resident. Sometimes seen in winter along the Rio Grande.

49. R. CALENDULA. One or two met with among the mountains.

SIALIA.

50. S. occidentalis. From October 20th to March 10th abundant, both among the mountains, where they feed on the cedar berries, and along the river, where they make the berries of the miseltoe their food.

51. S. arctica. Much rarer along the Rio Grande than among the mountains, where they breed. Arrive about the 10th of February, and remain in the river valley but a fortnight or three weeks; among the mountains some two months, or until one brood is reared, after which they take their departure. Once seen as early as January 29th.

CINCLUS.

52. C. Americanus. Very abundant on the Rio Mimbres during the whole winter, from the 10th of October until the 1st of April. Never seen along the Rio Grande, nor any where in the summer.

ORPHEUS.

53. O. polyglottus. Quite common, both along the Rio Grande valley and among the mountains, in the summer; in both situations breeds.

54. O. montanus. One shot at Fort Webster, January 27th.

TURDUS.

55. T. migratorius. Abundant on the Mimbres during the fall and winter. Very few seen after May, till October. Very few ever seen on the Rio Grande, and when seen, only in winter. Their range confined to those parts of the country only where cedars abound.

56. T. solitarius. A few resident throughout the country.

57. T. nanus. Very common in April on the Rio Grande, both at Forts Thorn and Fillmore. Probably migrates farther northward.

ANTHUS.

58. A. ludovicianus. A few straggling flocks observed every spring and fall, both in high and low ground.

ALAUDA.

59. A. occidentalis. Found during the spring and winter, chiefly on open plains and elevated ground. Not resident.

PLECTROPHANES.

60. P. McCownii, (Lawrence). Very large flocks everywhere, especially about the margins of the Rio Grande from the 10th of October to the last of April. Their habits much resemble those of P. nivalis. Never saw any in full summer plumage, as they do not breed here.

[*Description by George N. Lawrence, Esq. Read before the New York Lyceum of Natural History,* 8*th Sept.,* 1851, *and published in Proceedings of that Society.*

Upper plumage pale rufous ash; each feather marked down its centre with brownish black; a line of greyish white from the bill over to the eye; sides of head brownish ash; primaries and secondaries dusky ash, greyish white margins; tertiaries brown; lesser wing coverts with rufous marks; two central feathers dark brown, pale edgings; outer tail feathers white, palish brown on outer web, rest white, terminating with dark brown; throat and abdomen greyish white; upper part of breast and under the wings ash, tinged with pale rufous; bill nearly white, tipped with brown; legs pale red. Length 5⅜; wing 3⅜; first and second quills longest and equal.]

EMBERIZA.

61. E. GRAMMACA. Arrive at the Mimbres on the 25th of April, where they remain about two months. Found only among the mountains.

62. E. GRAMINEA. Only one met with on the Mimbres, on the 8th of January, during a thaw.

63. E. PASSERINA. A few seen on the Rio Grande during the latter part of February. Two obtained.

64. E. SOCIALIS. Arrives in small numbers March 4th, and remains in the country till the last of July. Not abundant.

NIPHEA.

65. N. OREGONA. Among the mountains. A few seen during the summer, where during the winter they are extremely common. It is found also in considerable number along the river valley during the winter months.

LINARIA.

66. L. PINUS. Common everywhere, except in Summer, through the country.

CARPODACUS.

67. C. FAMILIARIS. Rather common during the months of April and May, both in high and low grounds, feeding on the buds of the cotton wood, (P. Canadensis.) Breeds, (as observed by Col. McCall,) about Santa Fe and the vicinity.

C. OBSCURUS, (McCall.) Three shot near Fort Webster ; found in winter, among the pines upon a mountain. Male and female of similar plumage.

CARDUELIS.

68. C. MAGELLANICUS. Principally observed along the Rio Grande in the month of September. Its sojourn is very short. A very few seen in May at Fort Webster. Probably breeds among the mountains.

FRINGILLA.

69. F. MELODIA. Common during the winter and early spring, but not very numerous.

70. F. LEUCOPHRYS. The most abundant species of sparrow in New Mexico during the whole year, but most numerous in winter. Never have met with nest or eggs.

PIPILO.

71. P. ARCTICA. Throughout the summer remains among the mountains. Common along the Rio Grande in the winter months.

72. P. FUSCA. Like its congener, a constant resident in the territory, but unlike in never frequenting the river valley. Affects the locality of cedar bushes and mountain canōns; hence termed the Canōn Finch. (See Cassin's Illustrations.) Found at Fort Webster; equally common with P. Arctica; very shy and retiring in his habits; never found in flocks.

CORYDALINA.

73. C. BICOLOR. During the Spring of 1853 I observed a few specimens of this species. They appeared as if migrating, and I never since met with others, either in high or low land. Those seen were near Fort Webster.

COCCOBORUS.

74. C. CŒRULEUS. Quite common in Summer along the river valley. A few seen on the Rio Mimbres. They no doubt breed in the territory.

75. C. MELANOLEUCUS. A few seen and obtained along the Sierra de los Mimbres in the latter part of May, 1853, when they were in full song. Never seen in winter; rare.

COCCOTHRAUSTES.

76. C. VESPERTINA. A few seen among the mountains in March, 1853, and two specimens obtained.

PYRANGA.

77. P. AESTIVA. Rather common in summer along the Rio Grande. One or two met with in the mountains, where they are rather rare.

MOLOTHRUS.

78. M. PECORIS. Rather common everywhere from April to November. Not seen in winter.

AGELAIUS.

79. A. PHŒNICEUS. Common throughout the year. Breeds in the territory.

80. A. XANTHOCEPHALUS. Very common during the greater part of the year. Not seen in winter.

QUISCALUS.

81. Q. BREWERI. Very common during the early spring and fall months.

STURNELLA.

82. S. NEGLECTA. Common throughout the year. Most numerous in the valley of the Del Norte.

CORVUS.

83. C. CORAX. Exceedingly abundant, especially in winter. Breeds among the mountains, chiefly, but not exclusively.

84. C. AMERICANUS. Very rare, according to my observation ; but two met with, and at Fort Webster.

GARRULUS.

85. G. STELLERI. A common jay among the mountains.

86. G. ULTRAMARINUS. The most abundant species ; found in fall, not unfrequently along the Valley of the Rio Grande, but exceedingly numerous among the mountains.

87. G. CRISTATUS. Found about the woods bordering the northernmost portion of the Rio Grande. This I state not upon my own, but upon the authority of a person perfectly familiar with the blue jay of North America.

GYMNOKITTA, (Prince de Wied.)

88. G. CYANOCEPHALA. This extremely graceful and beautiful shaped jay I have met with along the Sierra del los Mimbres range, some five or six times. It is invariably found in flocks of forty or more individuals ; very shy and difficult of approach. This is the Cyanocorax Cassini of Col. McCall. I never met this bird along the valley of the del Norte. The peculiar taper bill of this species is quite characteristic ; very unlike that of the general family Corvinæ of Wilson. Its wings are also far wider in proportion than it is common to see in the jay family ; and the *tout ensemble* of the bird, except its bill, would seem to my mind to ally it nearly to the Nucifragæ.

NUCIFRAGA.

89. N. COLUMBIANA. Quite common near Fort Webster, during the months of November and December. Found mostly among the pinons, (Pinus monophyllus.)

LANIUS.

90. L. LUDOVICIANUS. Common and resident in the territory, but most abundant in the winter months.

VIREO.

91. V. gilvus. Common; the only one of this family ever obtained by me in New Mexico. From March 25th to August 15th.

ICTERIA.

92. I. viridis. A few seen during the spring and summer of 1853 on the Rio Mimbres, where they appeared to breed. Perhaps this species may be the *longicauda* of Lawrence.

BOMBICILLA.

93. B. Carolinensis. One flock observed frequenting the wild currant bushes near Fort Webster, in June, 1853. I obtained two specimens in order to prove their identity. Never seen elsewhere in the territory.

SITTA.

94. S. Carolinensis. A few only met with; mostly about Fort Fillmore.

95. S. Canadensis. Not rare among the mountains; much more common than the former.

96. S. pygmea. Several seen, and two shot near Fort Fillmore in 1853; none since seen.

TROCHILUS.

97. T. anna. Very abundant among the mountains in August and September; their haunts being flowery canōns, in the neighborhood of rocky streams. Rarely met with in the valley of Del Norte.

ALCEDO.

98. A. alcyon. Not very common; seen principally along the Rio de los Mimbres; the Rio Grande, in lat. below 30° being too murky a stream to suit his taste.

PICUS.

99. P. thyroideus. Found only occasionally in fall and winter, among the mountains. Three specimens obtained. Seem quite gentle, and are readily approachable. Never seen, except in the vicinity of or among pine trees.

100. P. varius. This bird, rarely found elsewhere than in the mountains, is rather common in the localities which it affects.

101. P. formicivorus. Quite rare; met with among the highest pine-clad mountains only. But the specimens were very shy and difficult of approach, even when perched on the highest trees.

102. P. villosus. Quite common everywhere.

103. P. torquatus. Not very rare in the mountains. Generally found among pine trees. Their shyness is very marked.

104. P. scalaris. Not rare along the Rio Grande. Affects principally the mesquit, (P. glandulosa,) as a resort. Not common in the mountains. Seems to take the place of P. pubescens.

105. P. Mexicanus, or collaris. A very common species throughout the territory; the most so of any other.

COCCYZUS.

106. S. Americanus. A few seen in summer, along the Rio Grande del Norte.

COLUMBA.

107. C. fasciata. Common in the mountains during the months of September and October, when they feed upon acorns; very shy; a few breed near the old copper mines near Fort Webster. The writer has met this species on the Mimbres in June, feeding on the berries of the wild currant.

ECTOPISTES.

108. E. Carolinensis. Extremely abundant everywhere, especially during the summer months. Large numbers resident.

MELEAGRIS.

109. M. gallipavo. Common through all the more unsettled parts of the territory, both in high and low land. The species found here has the upper tail coverts broadly tipped with white.

CYRTONYX.

110. C. massena. Not rare in the mountains; occasionally seen along the Rio Grande. Lie well to the dog, and afford much sport in shooting them. Their favorite resorts are along mountain sides, where they procure various kinds of insects, by grubbing them out with their bills, at the roots of the grass. Never detected vegetable matter in the stomachs of any. This species often hides behind stones and in hollows after being flushed.

LOPHORTYX.

111. L. Gambelii. The common quail of this country; found both in the high and low land. They are said not to lie well to a dog, but I have proved that this is the case only in bright weather; for often in cloudy days I have seen them lie well to a well-broken pointer. Their food, unlike the Massena partridge, is exclusively, almost, vegetable. The berries of the miseltoe in winter seem to furnish their principal food.

CALLIPEPLA.

112. C. squamata. Found only in high ground, elevated plains or mountain sides. They appear to be far the shyest of their species. Their flesh I prefer to that of either of the other. Capt. J. P. McCown, U. S. A., in his notes upon this bird, as observed in Texas, published by Geo. N. Lawrence, Esq., says he "thinks they never affect open plains." But as far as my observation goes, (which is quite extended in regard to this species) although generally found in the neighborhood of bushes, particularly mesquit and wild sage, I have often seen them feeding on perfectly open rocky hills.

GEOCOCCYX.

113. G. viaticus. Quite common among the mesquit bushes everywhere along the Del Norte. Rarer in the mountainous parts of the country.

TETRAO.

114. T. obscurus. One flock, only seen near the summit of the Sierra de los Mimbres. I state this fact on good authority, as I did not see the birds myself. All, however, agree they are not rare in the northern portions of the territory.

FULICA.

115. F. Americana. Exceedingly common in every slough and pond. Resident.

ORTYGOMETRA.

116. O. Carolinus. A few seen passing through the country in the Spring and Fall—not abundant. A few winter on the Rio Mimbres.

RALLUS.

117. R. Virginianus. One only met with near Fort Thorn, on the Rio Grande in the Spring of 1854.

GRUS.

118. G. Americanus. Quite common during March and October, on their northward and southward flight—principally the young. The adults in full plumage only occasionally seen, and never in large flocks.

CHARADRIUS.

119. C. vociferus. Very abundant during the year, with the exception of the months of November, December, and January. High as well as low grounds.

TRINGA.

120. T. Bartramii. Not very common—a few only seen along the grassy shores of the Rio Grande in Autumn and Spring. Probably do not breed here.

121. T. Schintzii. Two shot near Fort Fillmore, in October, '52. None else seen.

122. T. pusilla. Rather common—but in small flocks during the summer months—along the Rio Grande, and a few seen on the Mimbres.

123. T. arenaria. A few of this species seen in September, upon marshy grounds, near Fort Thorn.

TOTANUS.

124. T. macularius. Not abundant. A few seen every summer both at Forts Webster and Thorn.

125. T. solitarius. About as numerous as the last named variety.

126. T. flavipes. Quite abundant in the months of August and September in marshes bordering the Rio Grande.

127. T. vociferus. Found along the Rio Grande in small numbers during the spring and autumn months. Not seen in flocks as the former, but in parties of two or three, and more frequently singly.

SCOLOPAX.

128. S. Wilsonii. Winters on the Rio Mimbres, in small numbers. Not abundant anywhere, but more or less met with along the Del Norte in fall and spring.

129. S. Drummondii? Found in pairs, occasionally, along the marshes and sloughs bordering the Rio Grande, in September and October. Some eight or ten specimens shot by the writer.

RECURVIROSTRA.

130. R. Americana. Every spring and fall, a few found on the Del Norte and its vicinity.

HIMANTOPUS.

131. H. nigricollis. During fall and spring occasionally seen, but by no means a common species. Never seen on the Rio Mimbres.

NUMENIUS.

132. N. longirostris. Not uncommon during the months of September and April, particularly on the Laguna del Muerto.

133. N. Hudsonicus. One only seen and shot on the Rio Grande, near Fort Thorn, in the spring of '54.

IBIS.

134. I. falcinellus. Two shot at Fort Fillmore in May, in full spring plumage. A flock of the young of this species observed, and three individuals procured near Fort Thorn, in August '54.

TANTALUS.

135. T. loculator. A few seen along the Rio Grande, during the months of September and October. More common on the sloughs near El Paso del Norte, where I saw a moderately large flock in August '54.

ARDEA.

136. A. nycticorax. Quite common in summer.

137. A. lentiginosa. Not very common. A few seen every summer, but only on the Del Norte.

138. A. exilis. Four or five seen during the summer of 1854, near Fort Thorn. Two specimens obtained.

139. A. virescens. Not very rare in summer.

140. A. herodias. Quite common throughout the year. Resident.

141. A. candidissima. Common along the Rio Grande in summer only.

ANSER.

142. A. Canadensis. Resident. Breeds on the Rio Grande. Found in tolerable abundance throughout the winter. Not so common in summer. A few breed along the river.

143. A. albifrons. I have never seen but three of this species, of which I shot two at Fort Thorn in the fall of 1854. Said to be quite common a hundred and fifty miles higher up the Rio Grande del Norte.

144. A. hyperboreus. About as common as the albifrons. Few seen below Albuquerque.

ANAS.

145. A. boschas. Extremely common everywhere in winter. Many resident throughout the year. Breed in greater or less number.

146. A. obscura. Rare. A few seen on the Rio Grande every spring, on their passage north.

147. A. strepera. This beautiful duck is even more common than the Mallard in ponds adjoining the Rio del Norte, but only during the spring and winter months. Never observed after April till the last of October. Rare on the Rio Mimbres.

148. A. Americana. Not rare, both along the Del Norte and Mimbres in fall and winter.

149. A. acuta. Much rarer than the last. A few seen every spring and fall on the Del Norte.

150. A. sponsa. But two or three ever met with, and only on the Rio Mimbres.

151. A. Carolinensis. Quite common during the spring and fall along the Del Norte. Many winter on the Mimbres. Not met with in the summer.

152. A. discors. Not as common as the last.

153. A. Rafflesii. This beautiful duck is the most common summer duck found between latitudes 31° and 33°. Rarely seen in winter. Probably breeds in the section where it abounds in summer. Very common on the Mimbres and Del Norte. It is usually found among the sedge that borders sloughs near a water-course, where its plumage, so closely resembling the reddish brown of the withered sedge of last year's growth, renders it observed with difficulty, thus carrying out that admirable rule in nature's handiwork that so generally prevails, viz., assimilation of the plumage of birds to the color of the haunts they affect.

154. A. clypeata. Rather rare. Occasionally seen in fall and spring on the Del Norte and Mimbres.

FULIGULA.

155. F. VALISNERIANA. Found not unfrequently in fall and winter about the brackish sloughs near the Del Norte. Are the least shy of any species, and almost invariably found in excellent condition for the table. Never seen on the Mimbres.

156. F. FERINA. But three or four ever obtained.

157. F. MARILA. Rather common along the Rio Grande in winter. Also frequents to a considerable extent brackish sloughs.

158. F. RUFITORQUES. Rare. A few seen on the Mimbres, and occasionally along the Del Norte in winter.

159. F. RUBIDA. Occasionally seen in ponds near the Rio Grande in winter, and always in very poor condition especially the young.

160. F. ALBEOLA. About as common as the last. Found also in scattering numbers on the Mimbres in the spring months.

MERGUS.

161. M. MERGANSER. Not rare along the Rio Grande and Rio Mimbres during the fall and winter.

162. M. CUCULATUS. Met with only on the Rio Mimbres in the winter and spring.

PHALACROCORAX.

163. P. FLORIDANUS. Several shot in the spring of 1854 near Fort Thorn, in a brackish pond near the Del Norte.

PLOTUS.

164. P. ANHINGA. Two seen in September, 1854. One obtained, a female in full plumage.

PELECANUS.

165. P. AMERICANUS. Rather common in Albuquerque. In latitude 32° occasionally seen on the river in August.

STERNA.

166. S. NIGRA. Seen not unfrequently in September near Fort Thorn.

167. S. HIRUNDO. Met with near Fort Thorn in the month of August.

LARUS.

168. L. ZONORHYNCHUS. A few met with along the Del Norte during the summer months.

COLYMBUS.

169. C. GLACIALIS. A female obtained near Fort Thorn in the month of October.

The muddiness of the waters of the Del Norte below latitude 31° prevents, no doubt, its being found at all common.

PODICEPS.

170. P. CAROLINENSIS. Common in every pond of any size. Resident. The writer once took from the stomach of one an entire Mus arvensis, or field-mouse.

Analyses of the Meteoric Iron from Tuczon, Province of Sonora, Mexico.

By DR. F. A. GENTH.

The masses of Meteoric Iron of Tuczon, first brought to notice by Dr. J L Le Conte, (Sill. Journ. II. Ser. XIII. 289,) and afterwards more fully described by Prof. C. U. Shepard, (Sill. Journ. II. Ser. XVIII, 369,) were also mentioned by

Dr. J. L. Smith in his Memoir on Meteorites, published in the last number of the same Journal, March 1855, in which he gives the analysis of a piece cut from one of the huge masses by Lieut. Jno. G. Parke, of the U. S. Topographical Engineers. Several months ago I had finished the following analyses of the same meteorite, (which will be found to agree very well with those of Dr. Smith,) but various circumstances have heretofore prevented my presenting to the Academy the results of my examinations, which were made with pieces taken from the specimen presented to the collection of the Academy of Natural Sciences, by Dr. Heermann.

To the descriptions of this meteorite given by D. C. U. Shepard and Dr. J. L. Smith, I have to add only a few words.

The pieces which I have examined were not passive, as Prof. Shepard remarks, but dissolved readily in nitric acid, and also immediately precipitated metallic copper from the solution of the sulphate. On dissolving it in chlorohydric acid, only a slight odor of carburetted hydrogen was perceptible, and no gas evolved, which precipitated an ammoniacal solution of chloride of copper; a very small quantity of Schreibersite separated in form of a brownish powder.

On evaporation of the solution by nitric acid in a waterbath and subsequent moistening of the dry mass by chlorohydric acid, all the substances were taken up, excepting a small residue of siliceous matter. This dissolved partly on boiling with carbonate of soda, leaving a residue, which I took for a feldspathic mineral; the quantity obtained, however, was too small for further examination; the small quantities of alkalies, lime and alumina speak in favor of this view, and indicate that the residue insoluble in carbonate of soda is labradorite, a mineral which is partly decomposed by acids. The silica, soluble in carbonate of soda, results undoubtedly from the decomposition of olivine. I was particularly careful to obtain the whole quantity of cobalt and nickel, and have, therefore, not separated the sesquioxide of iron by carbonate of baryta, which method is not quite correct; but have precipitated the boiling solution, containing sesquioxide of iron, oxide of cobalt and nickel, magnesia, etc., and a sufficient quantity of chloride of ammonium by ammonia, and immediately afterwards acidulated by acetic acid, boiled and filtered. All the other determinations were made as usually.

The following results were obtained.

	I.	II.	III.
Copper,	0.008	not estimated.	not estimated.
Iron,	83.472	not estimated.	83.637
Cobalt,	0.420	0.366	9.851
Nickel,	9.441	8.689	
Chrom,	not estimated.		0.174
Alumina,	traces.	traces.	traces.
Magnesia,	2.593	2.030	2.147
Lime,	0.463	0.550	not estimated.
Soda,	not estimated.	not estimated.	0.174
Potash,	not estimated.	not estimated.	0.098
Phosphorus,	0.103	not estimated.	0.150
Silica,	2.889	not estimated.	4.169
? Labradorite.	1.046	not estimated.	

Notice upon the viviparous Fishes inhabiting the Pacific coast of North America, with an enumeration of the species observed.

By Charles Girard.

The observations which we have traced upon the genital apparatus of the female, have satisfied us that there exists an ovarian sheath or sack, which, during the early period of pregnancy, is an elongated and subcylindrical tube, containing the ovaries proper, two in number, each of which consisting of two, three, or more vascular membranes, attached by their upper edge to the upper floor or roof of the sheath, forming either one, two, or more pouches (according to the number of these membranes) of the same length as the sheath itself, widely open beneath, though not in a direct communication with one another, since the membranes hang loosely down, resting on the lower floor of the sheath.

The eggs are formed within the texture of the ovarian membranes themselves. We have examined the ovaries of *Ennichthys heermanni*, when the sheath, within which they were contained, was not larger than an ordinary quill. Numerous eggs could be observed in a very immature state, appearing to the naked eye like minute dots. Under the microscope, they exhibited evident traces of the germinal vesicle, surrounded as yet with a very scanty supply of vittiline substance.

The sheath and the ovaries are gradually increasing in bulk, as the eggs themselves first increase in size and the embryos afterwards. The sheath is a muscular membrane chiefly, whilst the ovarian membranes, we have stated, are altogether vascular.

When mature, the eggs either fall into the space between the membranes or ovarian pouches, or else remain attached to the ovaries until the embryos issue out of them. We are inclined to think that they drop into the pouches as eggs. At any rate, we found very young embryos loosely contained in the ovarian pouches, when no trace of the egg membrane could be seen within the tissues of the ovaries in the shape of corpora lutei or graffian vesicles. Whatever be the case, numerous eggs or embryos may be observed within one pouch. The young thus remain together until grown to a considerable size, when, filling up the space in a more compact manner, the ovarian membranes, in their nature very expansive, will extend a fold between each embryo. In this manner every individual young, when removed sideways from the ovary, appears to the operator as if enclosed in a separate cavity, pouch, or follicle, of the ovary, whilst, in reality, the membranes may be stretched out or extended, and the entire progeny loosened from all adherence or connection with them.

The male organs of generation consist of two spermaries, a right and a left, perfectly independent from one another, having each its separate duct, discharging their contents into an elongated cloaca, into which the bladder, likewise, empties its contents. This cloaca communicates with the exterior by a subcircular opening, the edge of which being rather protruding. Such is that apparatus—the same in its general structure as in the other osseous fishes. There is no sheath enclosing the two spermaries, and this fact throws a considerable light upon the morphology of the ovaries: the latter being in fact two in number, but so closely connected together as to simulate a single organ. Thus the general disposition, not the plan of structure, of these organs, is adapted to the mode of reproduction—a single sheath being a more simple adaptation than two, one for each ovary.

How the mechanical act of fecundation takes place we are not prepared to say from direct observations; the eggs themselves must be fecundated within the ovarian sheath; a copulation of some sort is therefore required, and it is not improbable that at this period the eggs have dropped from the ovarian membranes into the pouches, or spaces between these membranes, in which they are freely floating.

The hatching of the embryos takes place at an early period. After leaving the egg shell, they have an abdominal bag containing the remaining yelk, which is to be gradually absorbed during a period when neither the mouth nor the esophagus are formed; the fins have not yet appeared. The visual organs begin with a deposition of an external layer of black pimentum, in every respect similar to the same organs in invertebrata. The head is anteriorly rounded, and the cleft of the mouth not yet apparent at the period when the fins begin to develop. The caudal has the start over all other fins; its posterior margin is first lanceolated, then rounded, with a convexity gradually diminishing until it is perfectly straight, when a gradual emargination commences, and from a slight crescent reaches the forked shape which it assumes in the adult. The soft and articulated portion of the dorsal and anal fins, next assume a development reaching extraordinary proportions, which they again gradually lose so soon as free from parental sheltering. The posterior portion of these fins is especially to be noticed, as longer or deeper than the anterior portion (the reverse of what we observe in the adult,) and extending generally beyond the base of the caudal fin, a character, therefore, not exclusively proper to the genus *Rhacocheilus*. The spinous portion of these same fins, on the other hand, develop but slowly and gradually, reaching their full growth at a late period. The ventrals and pectorals are likewise tardy in their appearance. The scales are fully developed before the young leave the ovary.

Genus EMBIOTOCA, Agass.

Head of moderate development; mouth small; upper jaw slightly the longest. Lips thick and fleshy; lower one attached by a frenum to the symphysis of the dentary (chin). Intermaxillaries protractile. Teeth in both jaws, short, conical, blunt, slightly recurved and disposed upon one single row. Pharyngeal teeth pavement-like. Spinous portion of dorsal fin generally lower than the soft; the greatest difference in height between the two being observed upon their contiguity. Five or six branchiostegal rays. Scales of medium development; lateral line well marked, continuous from head to base of caudal, and concurrent with the dorsal outline. No scales upon the fins.

SYN. *Embiotoca*, AGASS. Amer. Journ. of Sc. Second series, xvi. 1853, 386; and xvii. 1854, 366.

1. EMBIOTOCA JACKSONI, Agass.—General form subelliptical. Anal broadly rounded upon its external margin; origin of latter fin situated opposite the sixth or seventh articulated ray of the dorsal. Tips of pectorals reaching a vertical line intersecting the base of the third articulated ray of dorsal fin. Eyes rather of small than of medium size. Posterior extremity of maxillary reaching a vertical line, passing in advance of anterior rim of orbit. Frontal region slightly depressed above the eyes. Branchiostegals five in number. About sixty scales in lateral line. Female, uniform dark purplish brown; male, olive brown, with diffused darker blotches.*

SYN. *Embiotoca jacksoni*, AGASS. Amer. Jour. of Sc. Second series, xvi. 1853, 387; and xvii., 1854, 366.—GIRARD, in Proc. Acad. Nat. Sc. Philad. vii. 1854, 151.

Locality.—San Francisco, Cal. Collected by Dr. A. L. Heermann.

2. EMBIOTOCA CASSIDYI, Grd.—General form subellipsoid. Frontal region very slightly depressed above the eyes. Anal undulated upon its external margin; its origin being opposite the third articulated ray of the dorsal fin. Tip of pectorals reaching a vertical line that would intersect the base of the last spiny ray of the dorsal. Eyes above the medium size. Posterior extremity of the maxillary not reaching the vertical of the anterior rim of the orbit. Branchiostegals six in number. Fifty-seven scales in the lateral line. Purplish brown, with about twelve transparent bands of a deeper hue.

SYN. *Embiotoca cassidyi*, GRD. in Proc. Acad. Nat. Sc. Philad. vii. 1854, 151.

Locality.—San Diego, Cal. Collection of Lieut. W. P. Trowbridge, U. S. A.

3. EMBIOTOCA WEBBI, Grd.—General form ellipsoid. Frontal region subconcave; occiput prominent. Anal undulated upon its external margin; its origin being opposite the fifth articulated ray of the dorsal. Tip of pectorals reaching the vertical of the third articulated ray of dorsal fin. Eyes above the medium size. Posterior extremity of maxillary extending to the vertical of anterior rim of orbit. Branchiostegals, five on right side, six on the left. Fifty-four scales in the lateral line. Olive brown, with indistinct purplish blotches.

Locality.—San Diego, Cal. Collection of Lieut. W. P. Trowbridge, U. S. A.

4. EMBIOTOCA LINEATA, Grd.—Body subelliptically elongated. Anal fin elon-

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* The coloration of this and of all the following species is described as extant on specimens after a long immersion in alcohol.

gated, with external margin nearly straight, diminishing gradually in height posteriorly; its origin being opposite to the sixth articulated ray of the dorsal. Tip of pectorals reaching a vertical line intersecting the base of last but one dorsal spine. Eyes of medium size. Posterior extremity of maxillary even with the vertical of anterior rim of orbit. Frontal region slightly depressed above the eyes. Branchiostegals five in number. Sixty-two scales in lateral line. Ground color of upper regions dark olive or reddish brown; reddish yellow beneath. Sides of abdomen with light longitudinal stripes intersecting the point of union of the rows of scales. Anal fin deep purple, with a yellowish vitta at its base.

SYN. *Embiotoca lineata*, GRD. in Proc. Acad. Nat. Sc. Philad. vii. 1854, 134 and 151.

Locality.—Bay of San Francisco, Cal. Collected by Dr. A. L. Heermann.

5. EMBIOTOCA ORNATA, Grd.—General form subelliptical. Posterior extremity of maxillary extending to a vertical line, which would pass behind the posterior nostrils. Eyes of medium size. External margin of anal nearly straight; its origin being opposite the fifth articulated ray of dorsal. Tips of pectorals falling under the vertical of the tenth dorsal spine. Branchiostegals five in number. About sixty-four scales in the lateral line. Color dark brown above; flanks and abdomen yellowish golden, with purple stripes along the line of union between the rows of scales. Scales on thoracic region provided with a central purple spot.

SYN. *Embiotoca lineata*, GRD. in Proc. Acad. Nat Sc. Philad. vii. 1854, 151.

Locality.—San Diego, Cal. Collection of Lieut. W. P. Trowbridge, U. S. A.}

6. EMBIOTOCA PERSPICABILIS, Grd.—Body subelliptically elongated. Frontal region gently declive. Eyes of medium size. Posterior extremity of maxillary not quite reaching the anterior rim of the orbit. Anal fin long; its anterior undivided rays longer than the rest, and its origin situated opposite the twelfth articulated ray of dorsal. Tips of pectorals reaching the vertical line intersecting the base of last dorsal spine. Five branchiostegal rays. Sixty-three scales in lateral line. Deep purplish brown above, lighter beneath. Flanks with light narrow longitudinal stripes intersecting the point of union of rows of scales. Dorsal, caudal anal and ventral fins reddish purple; pectorals yellowish.

Locality.—Fort Steilacoom, Puget Sound. Collected by Dr. Geo. Suckley, U. S. A.

Genus DAMALICHTHYS, Girard.

Head well developed. Eyes large. Mouth of medium size; upper jaw protruding considerably over the lower one. Teeth few in number, short and subconical, disposed upon one row only. Lips of moderate thickness; lower one firmly attached to the symphysis of the jaw. Opercular apparatus very much developed and covered with large scales. Anterior portion of soft dorsal very high. Peduncle of tail slender; caudal fin deeply forked. Anal elongated; its anterior portion the deepest. Ventrals and pectorals proportionally large.

7. DAMALICHTHYS VACCA, Grd.—Male provided with a subpyriform sac upon the anterior third of anal. Branchiostegals five in number. Ground color greyish olive. Scales with a golden and silvery metallic reflect. Fins unicolor.

Locality.—Fort Steilacoom, Puget Sound. Collected by Dr. Geo. Suckley, U. S. A.

Genus PHANERODON, Girard.

Head rather small. Mouth small; jaws equal. Lips thin; lower one attached by a very narrow frenum to the symphysis of its jaw. Intermaxillaries very protractile. Teeth large and subconical, disposed upon a single row on both jaws. Spinous portion of dorsal fin as high as the soft. Anterior articulated rays of anal undivided and preceded by three spinous rays, shorter than the articulated ones. Scales well developed. Lateral line concurrent with the dorsal outline.

Scales on the base of caudal rays. Dorsal groove extending from middle of spinous portion of dorsal fin to last third of soft portion. Sheath formed by two rows of scales anteriorly, and one only posteriorly.

Syn. *Phanerodon*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, 153.

8. Phanerodon furcatus, Grd.—General form elongated, rather tapering posteriorly, and very much compressed. Cleft of mouth not extending to the anterior rim of the orbit. Eyes large and circular. Branchiostegals five in number. Caudal slender and deeply forked. About sixty-three scales in lateral line. Yellowish brown above; lighter on the sides; whitish under the throat. Fins yellowish. Margin of dorsal and caudal greyish. A diffused marginal spot upon the anterior portion of anal.

Syn. *Phanerodon forcatus*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1824. 153.

Locality.—Bay of San Francisco, Cal. Collection of Lieut. Trowbridge, U. S. A.

Genus ABEONA, Girard.

Head of medium size; mouth very small; jaws equal. Lips rather thin; lower one attached by a frenum to the symphysis of the jaw. Intermaxillaries protractile. Teeth stoutish, conical, disposed upon one single row on both jaws. Branchiostegals five in number. Spinous portion of dorsal fin higher than the soft; line of separation between both of these slightly depressed. Articulated rays of anal all divided; spiny rays three in number, well developed; base of that fin rather short. Scales of moderate size. Lateral line concurrent with the dorsal outline. No scales upon the fins. Dorsal groove extending nearly to the whole base of the fin. Sheath formed by two rows of scales.

9. Abeona trowbridgii, Grd.—General form subelliptical. Head subconical; snout abbreviated; mouth small; posterior extremity of maxillary not reaching the vertical of anterior rim of orbit. Eyes large and circular. Branchiostegals five in number. Forty-one scales in lateral line. Olive or reddish brown above; silvery on the sides and abdomen. Flanks blotched. Fins yellowish, except anal, which is purplish, with its anterior portion spotted.

Syn. *Holconotus trowbridgii*, Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, 152.

Locality.—Not precisely known; San Francisco, Monterey, or San Diego, Cal.

Genus HOLCONOTUS, Agass.

Head well developed. Mouth small; jaws equal; lower one projecting slightly when mouth opens. Lips thin; lower one free all around. Intermaxillaries protractile to a considerable extent. Teeth small, slender, subconical, slightly curved, disposed upon a double row on the upper jaw and one only on the lower. Spinous portion of dorsal fin higher than the soft. Anterior articulated rays of anal mostly all divided, and preceded by three spines shorter than the other rays. Scales rather large. Lateral line concurrent with the dorsal outline. No scales on the fins. Dorsal groove extending from opposite middle of spinous portion of dorsal fin to beyond the middle of soft portion of same fin. Sheath formed of but one apparent row of scales, tapering posteriorly.

Syn. *Holconotus*, Agass. Amer. Journ. of Sc. Second series, xvii. 1854, 367.

10. Holconotus rhodoterus, Agass.—General form elongated, neither elliptical nor fusiform. Frontal region subconcave. Head subconical; mouth small; posterior extremity of maxillary not quite reaching the vertical of anterior rim of orbit. Eyes rather large and circular. Branchiostegals five in number. About forty-four scales in lateral line. Bluish grey or olive above, silvery or yellow upon the sides, with rose-colored spots disposed in longitudinal series.

Syn. *Holconotus rhodoterus*, Agass. Amer. Journ. of Sc. Second series, xvii. 1854, 368.—Grd. Proc. Acad. Nat. Sc. Philad. vii. 1854, 141 and 152.

Localities.—From California to Oregon. Collections of Lieut. R. S. Williamson, Lieut. W. P. Trowbridge and Gov. I. I. Stevens.

Genus ENNICHTHYS, Girard.

Head of medium size. Mouth large and oblique; lower jaw projecting beyond the upper. Lips thin, lower one free all around. Intermaxillaries slightly protractile. Teeth small, slender and conical, disposed upon a double series on both jaws. Spinous portion of dorsal fin higher than the soft. Anterior articulated rays of anal divided like the rest, and preceded by three small spines, lower than the articulated rays. Scales of moderate development. Lateral line concurrent with the dorsal outline. Scales upon the base of caudal and anal fins. Dorsal groove rather short. Sheath formed anteriorly by three rows of scales, tapering posteriorly.

11. ENNICHTHYS MEGALOPS, Grd.—General appearance gibbous. Dorsal sheath very short. Mouth large and oblique. Eyes very large, circular. Four rows of scales on preopercle. Branchiostegals six. Eighty-five scales in lateral line. Ash or greyish brown above. Sides and abdomen dull yellow or white ; a diffused spot upon anterior third of anal. Other fins yellowish ; tips of pectorals blackish or deep purple.

SYN. *Holoconotus megalops*, GRD. Proc. Acad. Nat. Sc. Philad. vii. 1854, 152.

Locality.—San Francisco, Cal. Collection of Lieut. W. P. Trowbridge, U. S. A.

12. ENNICHTHYS HEERMANNI, Grd.—General form subelliptical ; snout subconical ; mouth moderate ; posterior extremity of maxillary, even with a vertical line, intersecting the centre of the pupil. Eyes of medium size. Branchiostegals six. About sixty-two scales in lateral line. Back olivaceous ; sides and abdomen silver and golden ; flanks with indistinct transverse bars or bands. Fins unicolor, yellowish and greyish.

SYN. *Amphistichus heermanni*, GRD. Proc. Acad. Nat. Sc. Philad. vii. 1854, 135.

Locality.—San Francisco, Cal. Collected by Dr. A. L. Heermann.

Genus AMPHISTICHUS, Agass.

Head rather large. Mouth large ; jaws equal. Lips thin, lower one attached by a frenum to the symphysis of the lower jaw. Intermaxillaries slightly protractile. Teeth stoutish, recurved, conical and disposed upon a double row on both jaws. Spinous portion of dorsal fin generally lower than the soft, and sometimes equal to it in height. Anterior articulated rays of anal divided like the rest and preceded by three spines, the second and third of which being nearly as deep as the first articulated ray. Scales of moderate development. Lateral line concurrent with the dorsal outline. One row of scales along the base of anal. The dorsal groove extends from middle of spinous portion of dorsal fin to about the middle of soft portion of same fin. Sheath formed by two rows of scales anteriorly, tapering into one posteriorly.

SYN. *Amphistichus*, Agass. Amer. Journ. of Sc. Second series, xvii. 1854, 367.

13. AMPHISTICHUS ARGENTEUS, Agass.—General form subelliptical, more convex above than below. Snout anteriorly rounded. Posterior extremity of maxillary reaching a vertical line passing behind the pupil. Anterior anal spines rather large. Sixty-eight scales in lateral line. Branchiostegals, six. Bluish grey above, sides silvery, with indistinct olivaceous transverse bands. Vertical fins and ventrals olivaceous ; pectorals yellowish.

SYN. *Amphistichus argenteus*, Agass. Amer. Journ. of Sc. Second series, xvii. 1854, 367.—GRD. Proc. Acad. Nat. Sc. Philad. vii. 1854, 141 and 153.

Locality.—San Francisco, Cal. Collected by Dr. A. L. Heermann.

14. AMPHISTICHUS SIMILIS, Grd.—General form regularly subelliptical. Snout subconical. Posterior extremity of maxillary reaching a vertical line passing in advance of the pupil. Spinous portion of dorsal as high as the soft. Anterior anal spines rather small. Branchiostegals, five. Bluish grey above ; sides silvery. Dorsal and caudal greyish yellow ; anal, ventrals and pectorals dull yellowish.

SYN. *Amphistichus similis*, GRD. Proc. Acad. Nat. Sc. Philad. vii. 1854, 135.

Locality.—Bay of San Francisco, Cal. Collected by Dr. A. L. Heermann ; also in Collection of Lieut. W. P. Trowbridge.

Full descriptions, accompanied with figures of all the species above enumerated, are ready for the press, and will shortly be published by Congress.

Descriptions of New Species of Birds from Western Africa, in the collection of the Academy of Natural Sciences of Philadelphia.

By John Cassin.

1. Barbatula Duchaillui, nobis.

Form.—About the size of *Bucco philippensis*, Briss. Wing with the first quill spurious, fourth longest, but slightly longer than the fifth, tail somewhat rigid, legs moderate, tarsi rather long, toes long.

Dimensions.—Total length (of skin) male 5½ inches, wing 3¼, tail 1¾ inches.

Colors.—Throat, neck before and breast glossy blue-black, which color bifurcates and is continued on each side of the abdomen. Head above scarlet, a line from above the eye running downwards, on the side of the neck, light sulphur yellow. Upper parts black, with a steel blue lustre, the lesser wing coverts and many feathers of the back with small cordate and oval spots of sulphur yellow, greater wing coverts edged and feathers of the rump tipped with the same. Quills brownish black, edged on their inner webs with yellowish white, and on their outer webs with sulphur yellow. Middle of the abdomen and ventral region pale yellow, sides (from the breast to the flanks) and under tail coverts greenish yellow, all the feathers of which are widely tipped with that color and black at base. Tail brownish black, bill and feet dark. Female similar to the male, but with the colors less vivid. Another specimen (female) has many of the spots on the upper parts changed to chestnut color, and a trace of the same on the sides.

Hab.—Moonda river, Western Africa, discovered by Mr. P. Belloni Du Chaillu.

Obs.—This handsome species, though apparently properly belonging to this group of the *Bucconinæ* is unusually large. It does not closely resemble any other with which I am acquainted in any considerable degree, though of the general appearance of the smaller African species.

This bird is named in honor of its discoverer, Mr. P. Belloni Du Chaillu, an enterprizing young traveller, who has explored extensive and almost unknown regions of Western Africa, near the Equator, and whose discoveries in zoological and geographical science are in a high degree important and interesting. Mr. Du Chaillu ascertained the existence of three ranges of mountains at a distance of 150 miles from the coast, in which he traced the river Moonda to its source. The birds described in the present paper were collected during his journey along the course of this river. In his collection there are also numerous species hitherto little known, of which, and of those now described, his ample and interesting notes have been most kindly placed at my disposal, and will be published at my earliest leisure.

2. Barbatula fuliginosa, nobis.

Form.—About the size of the preceding. Bill short, straight, wide, first quill spurious, fifth slightly longest, tail short, legs moderate, toes long. Belong apparently to the genus *Gymnobucco*, Bonap., and much resembles *Gymnobucco calvus* in form and color, but is smaller and has the head covered with feathers, and the toes much longer.

Dimensions.—Total length (of skin) male, 5¾ inches, wing 3¼, tail 2 inches.

Colors.—Head above dull yellow, throat cinereous, all other parts of the plumage above and below fuliginous brown, some feathers on the abdomen, flanks and rump obscurely edged with greenish yellow. Quills brown, paler on the inner webs, tail dark brown, with a tinge of greenish yellow. Bill horn color, legs dark.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. Belloni Du Chaillu.

Obs.—This species, of which Mr. Du Chaillu assures me that his specimens are adult birds, and of which male, female, and young are in his collection, is very similar to *Gymnobucco calvus*, Bonap., which is also in the collection of the Academy. The head above, however, is not bare as in that species, but fully feathered, and this bird is smaller, though the legs and toes are stronger, and the latter much longer. The bill is very nearly of the same form as in that species, being wider vertically and shorter than in other African birds of this group. This species and *G. calvus* probably form a distinct subgenus, but the name given to it by the Prince of Canino is not appropriate so far as relates to our present bird.

3. Dicæum Rushiæ, nobis. Mrs. Rush's Warbler.

Form.—Very small, bill slender, curved, first quill spurious, fourth and fifth longest and nearly equal, tail short, legs and feet rather stout. Plumage of entire head and breast scale-like and rough to the touch.

Dimensions.—Total length (of skin) male, 3 inches, wing 1¾, tail 1 inch. Female slightly smaller.

Colors.—Every feather of the head above, neck, back, throat and breast with a central line of brown (sienna) and edged with ashy white, the brown darkest and predominating on the head, and palest but much predominating and giving the prevailing color on the back; the ashy white predominating on the throat and breast. Abdomen, rump, and tail coverts above and below pale yellow, tinged with greenish. Quills brown, edged with white on their inner webs, tail dark brown, nearly black. Bill with the upper mandible black, under mandible white at base and tipped with black, tarsi and toes light colored. Inferior coverts of the wings white.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—This is the most remarkable species in the present collection, and of its generic relations I am by no means certain, though it appears to be most nearly allied to the group in which it is at present placed. In its colors, however, it is quite different from any other known species of this genus, and the scale-like feathers of the head and breast are quite peculiar.

This bird is dedicated to the lady of James Rush, M.D., of Philadelphia, who, most ably seconding her distinguished husband in an enlightened encouragement of men devoted to the sciences and to the arts, has exerted an influence in the highest degree beneficial to their progress, and promotive of the true interests of society.

4. Ægithalus flavifrons, nobis.

Form.—Bill straight, pointed, rather long, first quill spurious, third and fourth longest and very nearly equal, tail rather short, legs long, rather robust.

Dimensions.—Male, total length (of skin) 3½ inches, wing 2¼, tail 1½ inches.

Colors.—Forehead bright yellow, entire plumage of the upper parts olive green tinged with yellow, lightest on the rump, quills and tail dark brown, the feathers of both edged with yellowish green on their outer webs. Entire under parts pale yellow, tinged with green. Inferior wing coverts white, bill and feet light horn color.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—Of the same form and about the size of *Æ. Smithi*, but entirely different in color, nor does it apparently intimately resemble any known species.

5. Syncopta tincta, nobis.

Form.—Bill rather long, first quill spurious, fourth and fifth longest and very nearly equal, tail moderate or rather short, legs long. Feathers of the back long and hair-like.

Dimensions.—Male, (of skin) total length 4 inches, wing 2¼, tail 1¾ inches.

Colors.—Head above, back and rump light cinereous, scapulars, wing coverts, and outer edges of quills (especially the secondaries) yellowish green. Quills and tail light hair brown. Throat, breast and sides light ashy, abdomen white, tibiæ ochre yellow, tinged with green. Edge of wings at the shoulders yellow, inferior coverts white. Bill dark, tarsi and toes light colored.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—The affinities of this genus are to the *Timalinæ.* The present species is rather smaller than *Syncopta brevicaudata*, but there is no considerable specific similarity. It is in both the collections of Mr. Du Chaillu and Dr. MacDowell, obtained by the latter on St. Paul's river.

6. Sylvia prasina, nobis. (Genus *Chloropeta?*)

Form.—Bill rather strong, upper mandible somewhat curved, wing rather long, first quill spurious, fourth longest, tail moderate, legs and toes rather long and robust.

Dimensions.—Male, (of skin) total length 4½ inches, wing 2½, tail 1¾ inches.

Colors.—A line over and behind the eye pale yellowish white, another immediately below it (through and behind the eye) and head above uniform very dark olive green. Back, rump, wings and tail dark olive green tinged with yellow, especially on the rump and outer edges of the secondary quills. Entire under parts very pale yellowish white, with a tinge of greenish ashy. Edge of the wing at the shoulder pale yellow, axillaries and under coverts yellowish white, bill dark, feet lighter.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—Remarkable for its uniform dark green color and white superciliary line. Of the generic relations of this bird I am not confident, but regard it as probably a *Chloropeta.*

7. BUTALIS INFUSCATUS, nobis.

Form.—Bill wide at base, rather short, wing long, first quill spurious, third longest, tail moderate, slightly emarginate.

Dimensions.—Total length (of skin) male, 4¾ inches, wing 3¼, tail 2 inches.

Colors.—Entire plumage above fuscous, rather darker on the head, and paler on the edges of the feathers of the back. Beneath fuscous, the edges of the feathers paler and slightly tinged with pale rufous on the breast, abdomen and under tail coverts, and on the throat (the edges of the feathers) with white. Quills and tail dark fuscous. Bill and feet dark. Female similar to the male but paler.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—This bird appears to be allied to *Muscicapa Fraseri*, Strickland, but is much smaller, and is in other respects quite distinct.

8. BUTALIS EPULATUS, nobis.

Form.—Small, but very robust, bill moderate, wide at base, with several pairs of bristles, wing rather long, first quill spurious, third and fourth longest and very nearly equal, tail moderate.

Dimensions.—Male, total length (of skin) 3¾ inches, wing 2¼, tail 1½ inches.

Colors.—Throat and middle of abdomen white, breast and flanks light cinereous. Entire plumage above cinereous, lighter on the rump and darkest on the head, quills brownish black, secondaries edged on their outer webs with light ashy, tail uniform brownish black, bill and feet dark, under mandible white at its base, under wing coverts and axillary feathers white.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—A small but robust species apparently not nearly related to any other. Its general form is much as though it had been accustomed to good cheer on the banks of the river Moonda, or wherever else it may have found sufficient entertainment.

9. PYCNOSPHRYS MCCALLII, nobis. (Genus *Pycnosphrys*, Strickland in Jard. Contr. 1849.)

Form.—Small, bill moderate, upper mandible curved, and with numerous pairs of rather strong bristles at base, which are nearly as long as the bill. Wing moderate, first quill spurious, fourth and fifth longest and very nearly equal, tail rather long, legs moderate or rather long. Feathers on the head above somewhat elongated and probably erectile, feathers of the back lengthened.

Dimensions.—Total length, sex unknown, (of skin) 4 inches, wing 1¾, tail 1¾ inches.

Colors.—Head above and tail fine rufous, every feather of the former with a central line of white, back, rump and wing coverts light cinereous, tinged with rufous on the rump and darkest on the wing coverts, upper tail coverts rufous. Throat and breast very pale reddish yellow, abdomen and under tail coverts white, underwing coverts pale reddish yellow (uniform with the throat). Bill and feet light colored.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—Another bird, the generic position of which is to us uncertain. After careful examination, however, it appears most properly belonging as we have placed it. This species is strongly characterized by the bright rufous of its head above and tail.

This bird is named in honor of Col. Geo. A. McCall, late Inspector General in the Army of the United States, in token of respect for his extensive and varied acquirements as a naturalist, and of personal friendship.

10. Drymoica Bairdii, nobis.

Form.—Bill rather long, wing short, rounded, first quill short, fifth longest, tail long, graduated, legs long, rather slender.

Dimensions.—Male, total length (of skin) 5¾ inches, wing 2¼, tail 3 inches.

Colors.—Middle of the abdomen white, entire under parts with regular transverse narrow bands of dark brown, (nearly black) and white. Head above ashy brown, other upper parts dark brownish olive, coverts of the wings and some of the shorter secondaries tipped with white. Quills hair brown, lighter on the edges of both webs, tail hair brown, tipped with white, and a rather obscure subterminal band of dark brown. Under wing coverts, white. Bill and tarsi dark (nearly black, in skin). Female similar, but slightly smaller, white space on the middle of the abdomen larger, tarsi lighter colored.

Hab.—Moonda river, Western Africa. Discovered by Mr. P. B. Du Chaillu.

Obs.—This species differs in colors from any other known to me, and the transverse bands of the inferior surface of the body are, so far as I know, peculiar to the present bird only of this genus.

This remarkable bird is dedicated to Professor Spencer F. Baird, of the Smithsonian Institution, one of the most eminent American naturalists, as a remembrancer of our long continued and pleasant friendship.

11. Laniarius lepidus, nobis.

Form—Bill rather long, wide at base, much compressed towards the end, which is hooked and conspicuously toothed, first quill nearly spurious, fifth longest, tail rather long, feathers of the rump long and soft. Tarsi rather long.

Dimensions.—Total length, male (of skin), 9 inches, wing 4¼, tail 4½ inches.

Colors—A spot before the eye white, the feathers of which are narrowly tipped with black. Entire upper parts olive tinged with yellow, especially on the rump, superior coverts of the wings greenish brown, every feather and the exposed ends of the secondaries having a terminal spot of greenish yellow and on their inner webs with pale yellow. Entire under parts of the body ashy white, darker on the breast. Tibiæ, flanks and under tail coverts yellow, the former tinged with greenish. Tail yellowish olive tinged with yellow, and all the feathers, except the two in the middle, tipped with pale yellow. Under wing coverts yellow. Bill and tarsi dark.

Hab.—Liberia. Rev. Wesley Johnson; St. Paul's river, Dr. MacDowall; Moonda river, Mr. Du Chaillu.

Obs.—Though this singular species has long been in the possession of the Academy, I have not found it described. It appears to be somewhat similar to *Laniarius peli*, Bonap. (Consp. Av. p. 360), but not identical, so far as can be ascertained from the short description as cited. This bird can be easily recognized by the white spots in front of the eye, the feathers of which are erect and tipped with black, and by the yellow spots at the tips of the wing coverts and secondaries.

12. Criniger xanthogaster, nobis.

Form.—Bill rather long, slightly curved, wing with the first quill spurious, fourth longest, tail rather long. Feathers of the rump somewhat lengthened and soft.

Dimensions.—Total length (of skin), male, 7½ inches, wing 3¾, tail 3¼ inches.

Colors.—Entire upper parts yellowish olive, the yellow more distinct on the rump. Quills dark brown, edged on their outer webs with olive, and on their inner webs with greenish yellow. Entire under parts light yellow, tinged with olive green on the breast and sides, throat slightly mixed with white, and the shafts of some of the feathers on the neck before white. Tail above dark olive, beneath greenish yellow. Bill and feet light colored.

Hab.—Moonda river, Western Africa. Discovered by M. P. B. Du Chaillu.

Obs.—Apparently a *Criniger*, Temminck, and almost exactly resembles in color *Criniger ictericus*, Strickland, of India, but is smaller, and otherwise different. The only specimens that I have ever seen are in the present collection.

13. TRICOPHORUS LEUCURUS, nobis.

Form.—Bill wide at base, wing with the first quill subspurious, fifth quill longest, tail moderate, with the feathers broad, tarsus and toes rather short. Feathers of the rump lengthened and soft.

Dimensions.—Total length (of skin), sex unknown, 7 inches, wing 4, tail 3 inches.

Colors.—Four middle feathers of the tail brownish black, other tail feathers, (four on each side) white, tinged with yellow on their outer webs and tipped with brown. Entire upper parts yellowish olive, darker on the head. Quills dark brown, edged with yellowish green on their outer webs and with pale ashy white on their inner webs. Entire under parts dark cinereous tinged with yellowish green, under coverts of the tail yellowish white. Bill and feet dark.

Hab.—St. Paul's river. Discovered by Robert MacDowall, M.D.

Obs.—This is another bird which I have found some difficulty in assigning to a genus. It can easily be recognised by its white tail feathers, as described above.

14. PHYLLOSTROPHUS LEUCOPLEURUS, nobis.

Form —Bill moderate first quill short, fourth slightly longest, tail rather long, tarsi and feet rather long, feathers of the head above somewhat scale-like.

Dimensions.—Total length (of skin) sex unknown, 9¼ inches, wing 4¼, tail 4¼ inches.

Colors.—Entire upper parts brown, with a slight tinge of yellowish on the back and of ashy on the head. Quills brownish black edged with brown on their outer webs and with ashy white on their inner webs. Throat and breast ashy white tinged with brownish green on the breast, where many of the feathers have central stripes of ashy white. Sides (under the wing) with a large white space, abdomen and under coverts of the tail white, with a very pale tinge of yellow. Tail brown, four outer feathers (on each side) widely tipped with white. Bill and feet dark.

Hab.—Moonda river, Western Africa. Discovered by M. P. B. Du Chaillu.

Obs.—One specimen only of this fine species is in the collection. It is strongly characterised by the large white spaces on the sides, which are readily observed on raising the wing. This bird may be related to *Phyllastrephus capensis* or *P. senegalensis*, of both of which indifferent figures and descriptions have been given, but of which I have not seen specimens.

*Notice of Remarkable Strata containing the remains of Infusoria and Polythalamia in the Tertiary Formation of Monterey, California.**

By WILLIAM P. BLAKE,

Geologist of the United States Pacific Railroad Survey in California.

When in San Francisco, in June, 1854, I received a fragment of a white, porous earth, resembling chalk ; but which, from its lightness and general characters, was considered to be infusorial.[*] A small piece, on being subjected to examination by the microscope, was found to contain innumerable discs and long cylindrical spiculæ and ring-like organic remains. A portion was then forwarded to Prof. J. W. Bailey, of West Point, who, in his letter of acknowledgement, thus remarks: "The specimen from Monterey is rich in marine diatoms; the seive-like discs belong to the genus Cascinodiscus, but there are many other very beautiful forms present. It is singular that the deposit contains some species which have only recently been detected as living species in the Pacific. It has quite a modern look, and contains many species which could only have grown in shallow water."

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*This notice has been deferred in consequence of the expectation of receiving from California a full suite of specimens collected at the locality, which should have arrived by this time. The principal facts concerning the position and geology of the deposits are now presented, and will be followed by more important details regarding the chemical composition and organisms of the specimens after they have been received.

I soon afterwards visited Monterey and examined the deposit. It is about two miles distant in a south-east direction from the centre of the town, and forms a portion of a hill which fronts the bay and rises on the east side of the stage-road to San Francisco. This hill is between 500 and 600 feet high, and it is separated from the bay by a broad, sandy plain, and a belt of sand-hills along the beach. Groves of oak trees are found around the base of the hill, but towards its top it is covered with a dense growth of chamisal,[†] through which the outcrop of the white earth can be seen as a white spot on the hill side from all parts of the town and the anchorage. On arriving at the locality, however, the white spot which appeared so limited when viewed from the town, is found to have a length of about one hundred feet, and a width of from 15 to 40. It is also seen to extend in all directions under the vegetation by which it is partly obscured. The glossy green leaves of the shrubs which grow up about its borders, contrasted strangely with the white, chalk-like earth, which seemed as little fitted for vegetation as a lime-heap. The weathering of the formation has loosened small blocks and fragments, which lie upon the surface and hide the stratification from view, so that it at first appears as a homogeneous mass of vast extent; but on breaking out some large blocks from a favorable exposure, the lines of stratification became evident, and on a closer inspection they were seen to be as numerous and thin as the leaves of a book.

This out-crop appears to be the principal stratum, and it is near the top of the hill; but lower down a succession of strata are found alternating with siliceous beds, which are peculiarly compact and very finely stratified. Some of these are excessively hard, and break with a conchoidal fracture like flint or semi-opal. The whole form a series of parallel strata which are not horizontal, but dip south of east, or nearly south-easterly, at an inclination of from twenty to thirty degrees. The following is the succession of the strata from the upper stratum downwards to the lowest point examined.

The thicknesses stated are approximations.

Section.

		Feet.	Inches.
1.	White siliceous earth, light and charged with infusoria	50	—
2.	Compact and siliceous, probably bituminous,	—	3
3.	White and earthy, resembling 1,	1	—
4.	Compact, siliceous, dark colored and bituminous,	—	6
5.	White and earthy, like 1,	12	—
6.	Compact, siliceous, dark colored and bituminous,	—	6
7.	White and earthy, like 1,	2	—
8.	Compact, flint-like, very hard and nearly white. In thin layers,	2	—
9.	Thin layers of white earthy material, similar to No. 1; intercalated with thin sheets of compact and semi-opaline silica,	10	—
10.	Compact and siliceous. Hard and drab-colored,	3	—
11.	White and earthy, similar to No. 1. (The thickness of this stratum was not estimated; it extends downwards, under the chamisal, for a long distance.)	—	—

It will thus be seen that there is one bed of microscopic organisms 50 feet in thickness, and this is believed to be much less than it in reality is. The underlying strata, which are similar in their appearance, are probably equally fossiliferous, but this has not been demonstrated by examination. Their thicknesses were respectively, 1, 12, 2 and 10 feet, which, added to the thickness of the upper stratum, make a total of seventy-five feet. This is exclusive of the compact siliceous strata, which are presumed to be also fossiliferous. These siliceous layers are very extraordinary, some of them being like semi-opal in density, and in the character of their fracture, the surfaces being curved and vitreous, and the edges sometimes as sharp as glass. Their color varies from white to drab, or fawn-color, and is sometimes pink; some specimens resemble ivory or horn in color and translucency. Silica appears to be the constituent, and it must have been deposited in an impalpable form. The mineral characters of some of these strata are like those of specimens of surf-worn boulders that I picked up on the beach at San Pedro. These consist of silica charged with bitumen, and when broken present a conchoidal fracture and a resinous appearance. It is expected that these siliceous specimens will not only be interesting chemically, but that they will furnish beautiful objects for the microscope.

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[*] This specimen was collected by A. S. Taylor, Esq., of Monterey, and forwarded to Dr. J. B. Trask, from whom I received it.

[†] A low green growth of dwarf oaks or other shrubs.

On the top of this formation there is a rudely stratified or assorted mass of boulders and gravel, like the accumulation along a beach. It is, in fact, a layer of beach-shingle, and it includes, among pebbles of granite and other rocks, water-worn masses of the compact siliceous rock, probably derived from the subjacent beds. One of these siliceous masses that was dark colored and probably bituminous, was found to be perforated by boring testacea. This was an unexpected and interesting discovery; for, here were masses of rocks of tertiary age that had been exposed and perforated by marine shells before being broken off, rounded and worn by the surf among other and harder rocks, and thrown on a beach by the retiring waters. The beach still remains, and rests exposed on the very summit of the hill, covering the edges of the strata—a remnant of a former shore now five hundred feet above the ocean.

This interesting formation, teeming with the skeletons of microscopic organisms appears to overlie and to be conformable with the tertiary strata that underlie a part of the town of Monterey and extend to and beyond the Mission of San Carlos. These strata rest upon a porphyritic granite, which forms the projection of the coast called Point Pinos, and is the bulwark of the bay.

Several quarries have been opened in the sedimentary formation near the town, and it is seen to consist of regular strata of light-colored argillaceous and arenaceous material; the particles being very fine and firmly impacted, so that, in some places, the strata break with smooth, curved surfaces, and have a semi-vitreous lustre. A large quantity of stone has been removed from these quarries and used in the construction of the buildings and walls of the town. The large Court House built by Walter Colton, and the church erected in 1794, are constructed of this stone, and the sharp edges and angles which are retained by the blocks in the walls of the latter show that the material has great durability and resists decomposition exceedingly well.

When the blocks are freshly broken out from the quarry they are easily hewn into shape by an axe; being extremely light and free from coarse sand or gravel. They harden slightly on exposure, but may be cut away with a knife. The color is a light buff or yellow, of various shades, passing into fawn color and drab; some of the beds are quite dark, being greenish black, or a dark olive brown. The prevailing color is, however, a light drab or yellow, very similar to the color of bath brick or lithographic stone. It is not unlike the former in density, being porous, and, when dry, it absorbs water with rapidity; in this respect and in density, it also resembles biscuit-ware, or the material of the porous cells of Grove's batteries.

These strata are fossiliferous, and many of the compact layers when split up into slabs parallel with the fine lines of stratification are found to be covered with impressions of small bivalve shells, lying thickly together, sometimes one within the other, as if they had fallen upon the bottom of a quiet sea. The most abundant shell is a small *Tellina*, which Mr. T. A. Conrad has described for me and named *T. congesta*. It is also found in similar strata at San Carlos, and is there associated with *Lutraria Traskii*, Conrad, also a new species. Impressions of very small crabs have been found in this rock, and I have also seen what appeared to be the marks of fucoides on the surfaces of the layers.

A stratum of the Monterey formation similar in texture to the stone which is used for building, but different in color, also contains casts of *Tellina congesta* in great numbers. The color of this rock is a dark olive green or brown, but when it has been weathered the surface is white. When it is dry it is very light and adheres to the tongue, being very absorbent. Though soft and easily cut with a knife it is very tough, and gives a ringing sound when struck by a hammer, like a well baked tile.

In addition to the *Tellina* and other fossil shells which this rock contains, it is charged with innumerable and beautiful Polythalamia, (Foraminifera, D'Orbigny,) lying in thin layers through the mass and becoming visible in white lines on the edges of the slabs. They may be seen with the naked eye, but the assistance of the microscope is required to trace the forms of those that happen to be exposed. They are very white and perfectly preserved, and are exceedingly beautiful objects for the microscope. It is, however, to be regretted that the material in which they are preserved is so indurated and resisting that it is impossible to get them out for study. Every cross fracture of the rock presents innumerable sections, and occasionally the full form of a shell is visible on the surface.

The rock has another interesting peculiarity, which must be mentioned—it is bituminous, and gives off an empyreumatic odor when it is heated before the blowpipe flame. The specimens which I have are perforated by *Petricola cylindracea* and other boring shells.

The upper stratum of the formation at the quarries, which is overlaid by the beach shingle before mentioned, is worn smooth and uneven, as if it had been subjected to the action of the surf. It has been perforated by *Pholadidæ*, and their cells still remain. They are large and numerous, but no shell could be found in them. They are filled up with fine sea-sand, which indicate that the shells must have been removed before the surface emerged from the tide. The cells are in all respects similar to those now being formed and occupied in the rocks of the beach.

This locality is now at an elevation of about sixty feet above the beach and one quarter of a mile from it. It presents convincing evidence of the comparatively recent elevation of the coast.

The connection between the strata of siliceous infusoria and the strata containing the Polythalamia has not been traced, but it is probable that the two deposits are conformable, and parts of one great series. If this is so, we may conclude that the intervening strata are also charged with fossils. The formation, so far as already known, is a wonderful record of life, and a rich mine of results for the geologist and palæontologist.

Characteristics of some New Species of Mammalia, collected by the U. S. and Mexican Boundary Survey, Major W. H. Emory, U. S. A. Commissioner.

By Spencer F. Baird.*

PART I.

Sciurus limitis, Baird.—Size less than that of *S. migratorius*. Upper molars four. Fur very short, compact and close pressed. Ears long, coated with very short hairs. Feet small; soles naked, and dark brown.

Color. Above, mixed cinnamon and black. Under parts of body and tail, cinnamon. Tail above and on the sides like the back, with three annulations of black. Head and body 10 inches. Tail mutilated. Hind foot, from heel,

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* Full descriptions of these species will shortly appear in the official reports of the Survey.

1 8-12ths inches. Skull 2 3-12ths inches. Collected by J. H. Clark, on Devil's river, Texas.

SCIURUS CASTANOTUS, Baird.—Size that of *S. cinereus*, or larger. Five permanent upper molars. Tail about as long as the body, not bushy. Ears clothed with rather short hairs, not tufted. Soles naked.

Color. Back deep chesnut brown. Sides and rest of upper parts mixed ash, gray and lead color. Eyelids, upper surface of feet and whole of under parts white. Ears and sides of the head ash-gray. Tail white beneath, and all round the margins and tip. The hairs on the upper surface of the tail are black at the base, then white, then black, with white tips—the black predominating; in one specimen these hairs are entirely black, except at the tip. Head and body 12 inches; tail vertebræ 11 inches; to end of hairs 12¾ inches. Hind feet from heel 2 7-12ths inches. Length of skull 2 4½-12ths inches.

This species differs from *S. aberti* in the absence of tufts to the ear, greater extent of chestnut brown on the back, clear white and black of the tail, with few annulations, &c.

Collected on the Mimbres, by J. H. Clark.

TAMIAS DORSALIS, Baird.—About the size of *T. lysteri*. Sides of the head with the stripes of *Tamias*, but more strongly defined than usual. Tail vertebræ not quite half the length of the body; the caudal hairs unusually long, black and chestnut color, largely tipped with white. Body above hoary, mixed with rusty and brown; beneath dull white. Sides and buttocks dull rusty. A single distinct dorsal dark stripe, the others obsolete, except the exterior one on either side, which is rather more evident. Body and head 5½ inches. Tail vertebræ 2 inches; to end of hairs 3 5-12ths inches. Hind feet from heel 1 3-12ths inches.

Collected on the Mimbres by J. H. Clark.

SPERMOPHILUS SPILOSOMA, Bennet. Erroneously considered by Audubon and Bachman to be the young of *S. mexicanus*.

Collected at El Paso by J. H. Clark.

SPERMOPHILUS COUCHII, Baird.—General character sciurine, like *S. beecheyi* and *douglassi*. Color entirely and everywhere black. Thumb with a broad blunt nail. Soles of feet naked. Tail about two-thirds the length of body, with long coarse hairs. Head and body 10 inches. Tail to end of vertebræ 5½ inches; of hairs 6¾ inches.

Collected in Santa Caterina, Mexico, by Lieut. Couch, and at Victoria by Dr. Berlandiere.

PEROGNATUS FLAVUS, Baird.—Much smaller than the common house mouse, (*Mus musculus.*) Tail nearly equal to or less than the body; scarcely differing in color above and below. Hind feet short.

Color.—Above yellowish buff, with dusky tips to some of the hairs; paler and clearer on the sides. Beneath snowy white to the roots of the hairs. Hairs on the back plumbeous only on their basal half. Head and body 2 2-12ths inches. Tail to end of vertebræ 2 inches. Hind foot from heel 7¼ inches.

Collected at El Paso by J. H. Clark.

GEOMYS CLARKII, Baird.—Upper incisors with a single deep groove on the median line of the anterior face; the portions on either side similar. Fore feet nearly equal to or a little shorter than the hinder. Second claw of the hand reaching as far as the fourth. Cheek pouches small. Fur soft and full

Color. Above uniform yellowish brown, the hairs with dusky tips. Beneath paler, with strong tinge of gray. Cheek pouches without blotches, and similar to the adjacent regions. Head and body 6 inches. Tail to end of vertebræ 2½ inches, the portion covered with very short hairs 2 2-12 inches. Hind foot, from heel, 1 3½-12 inches; middle claw 7 lines.

Collected at Presidio del Norte, on the Rio Grande, by J. H. Clark.

THOMOMYS UMBRINUS. *Geomys umbrinus*, Rich. Specimens, most probably of this species, were collected by Mr. Clark at El Paso.

Sigmodon berlandieri, Baird. Rather larger than *S. hispidus*. Claws weaker. Tail equal to or longer than the body.

Color. Above grayish yellow-brown, lined with black. No trace of ferruginous.

Collected between San Antonio and El Paso, by Mr. Clark, and in Northern Mexico, by Lt. Couch.

Neotoma mexicana, Baird. Ears very large. Feet small. Tail three fourths (?) the length of the body, covered with short stiff hair, so as to conceal the annuli. Fur long and very soft.

Color. Above light yellowish brown, lined with dark brown; pale fulvous on the sides. Feet and under surface of the body, white. Body and head 8 inches. Tail to end of vertebræ 5 inches, of hairs 5 3-12ths inches. Hind foot 1 1-12th inches. Collected near Chihuahua, by John Potts, Esq.

Neotoma micropus, Baird. About the size of *N. floridana*. Tail scarcely two-thirds the length of the body. Sparsely coated with hairs. Skull much broader and feet shorter than in *N. floridana*.

Color.—Above grayish slate; feet and under parts white. Head and body 8 4-12ths inches. Hind feet 1 4½-12 inches.

Collected at Charco Escondido and Santa Rosalio, Mexico, by Lieut. Couch.

Characteristics of some New Species of North American Mammalia, collected chiefly in connection with the U. S. Surveys of a Railroad Route to the Pacific.

By Spencer F. Baird.*

PART I.

Lepus Washingtonii, Baird.—Size about that of *L. sylvaticus*, or a little larger. Fur very soft and full on the body and under surface of feet. Tail very short. Ears shorter than the head. Hind foot, measured from the heel, longer than the head almost by the length of the claws.

Color.—Back, sides and throat reddish brown, the former with many glossy black hairs. Tail lead-colored above; rusty white beneath. Abdomen pure white. Ears black on the posterior margin and tip of their inner (convex) surface, the remainder of which is pale reddish brown, except on the exterior band. No change to white in winter. Head and body 18½ inches. Tail vertebræ 8 lines. Ears 3 3-12ths inches. Hind foot 4½ inches.

Collected at Puget Sound and Shoalwater Bay by Dr. Geo. Suckley, U. S. A., and Dr. J. G. Cooper. Survey of Northern Route, Gov. I. I. Stevens.

Lepus trowbridgii, Baird.—But little larger than *Lepus artemisiæ*. Head small; ears about equal to it in length, broad and ovate. Tail very small. Hind feet very short, densely padded, and about the length of the head.

Color.—Above yellowish brown and dark brown mixed; beneath grayish lead color. The sides differ from the back only in being a little paler. Back of neck pale rusty. Ears grayish and black on the external band, ashy gray elsewhere; with but slight indication of a darker margin or tip. Head and body 13 inches. Tail to end of vertebræ 5 lines. Ears 2 4-12ths inches. Hind foot, from heel, 2 8-12ths inches.

Hab.—Coast of California, from Monterey to Bodega. Collected by Lt. W. P. Trowbridge, U. S. A. Lt. A. W. Whipple, U. S. A.

Sciurus suckleyi, Baird.—Larger than *S. hudsonius*. Tail much shorter than the body, very flat. Ears tufted. Under surface of the feet densely clothed with hairs to the bases of the toes. Fur full and soft.

Color.—Above mixed chestnut brown and black; beneath pale brownish rusty; the hairs on the belly obscurely annulated with black. A dusky line along the flanks. Tail black at the extremity; margined throughout with rusty white; the hairs of the tail annulated except at the tip with chestnut and black, like the back. Head and body 9 inches. Tail vertebræ 4½ inches. To tip of hairs 6 inches.

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* Full descriptions of these species will shortly appear in the official reports of the Railroad Surveys.

Collected by Dr. Suckley at Steilacoom, Puget Sound. Gov. I. I. Stevens.

Tamias cooperi, Baird.—Size rather above that of *T. lysteri*. Tail vertebræ little more than half the length of the body. Ears large.

Color.—Anterior portion of the body above and sides grizzled gray and brownish ash, somewhat as in the Norway rat, (*Mus decumanus*) with a slight dash of rusty on the middle of the sides. Three distinct dorsal stripes of glossy dark brown with two others (one on either side) less strongly marked. The intervals between these stripes light grayish. Under parts grayish white, the line of separation from the sides very distinct. Hairs of the tail dark at the roots, then rusty, then black, and tipped with grayish. Length of head and body 6 inches. Tail vertebræ 3 4-12ths inches; to tip of hairs 4 inches.

Collected on the eastern side of the Cascade Mountains, Washington Territory, by Dr. J. G. Cooper. Gov. I. I. Stevens.

Spermophilus gunnisoni, Baird.—Smaller than *S. ludovicianus*. Shape very similar. Ears very short. Thumb with a well developed claw. Tail very short, the vertebræ about one-ninth the length of the body.

Color.—Above light liver brown, mixed intimately with ash, light brown, and black. Beneath pale yellowish brown. Tail white along the edge and tip, with a sub-marginal band of black. The hairs at the extremity of the tail are entirely white, except a narrow central band of black. Head and body 11 inches. Tail vertebræ 1 3-12ths inches; to end of hairs 1 11-12ths inches. Hind foot, from heel 1 10-12ths inches.

Collected by Mr. Kreutzfeldt in the Cochitope Pass of Rocky Mountains.
Lt. E. G. Beckwith.

Spermophilus grammurus, Say.—Specimens of this long lost species of Say were collected by Capt. Pope, in Western Texas.

Spermophilus beecheyi, Richardson.—Specimens of this species were collected in California by Dr. A. L. Heermann and by Lt. Trowbridge.

Dipodomys montanus, Baird.—Tail stout, rather longer than the body, with a dusky stripe above and below, which extends to the end of the tail; the hairs springing from the extreme tip being, however, white. The white lateral stripes reach to the end of the tail. A decided crest on the upper surface of the tail towards its extremity. Body above yellowish brown, mixed with a good deal of dusky. Head and body 4½ inches. Tail vertebræ 5 3-12ths inches; to end of hairs 6 4-12ths inches.

Collected near Fort Massachusetts by Mr. Kreutzfeldt. Lt. E. G. Beckwith.

Dipodomys agilis, Gambel.*—Tail slender, much longer than the body, with a moderate crest of erect hairs towards the tip, on both the upper and under surfaces. The terminal fourth or fifth of the tail uniformly dusky; the dark subcaudal stripe extending to the end of the tail without interruption. Body above dusky, with only a slight tinge of yellowish brown on the sides. Head and body

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*Dr. Gambel described a *Dipodomys* under this name from Los Angeles, but unfortunately omitted to mention any specific characters. Having received specimens from this same locality, clearly referrible to *D. phillipsii*, I was forced to consider Dr. Gambel's name as a synonym, his description applying as well to one as the other. I accordingly, in my notes, gave to the present species the name of *D. gambeli*. As Dr. Le Conte, in his masterly monograph of the genus, has defined the same species with much precision under Dr. Gambel's name, and is besides satisfied that it is really found at Los Angeles, with the other, I have finally concluded it best to adopt the name of *D. agilis*, which, however, is rather that of Le Conte than Gambel.

4 4-12ths inches. Tail to end of vertebræ 5 8-12ths inches; of hairs 6 2-12ths inches.

Collected by Lt. Trowbridge near San Diego, or Monterey.

Lt. A. W. Whipple.

GEOMYS BREVICEPS, Baird.—Upper incisors with a small longitudinal groove near the inner edge, and a much larger one bisecting the remaining space. Fore feet decidedly longer than the hinder, their second claw reaching only to the middle of the fourth. Cheek pouches ample. Skull short, broad. Forehead plane, outlines of zygomata seen from above, curved, widest apart at the junction of the malar and temporal bones.

Color.—Above dark chestnut brown, with dark clouding, caused by the deeper colored tips of the hairs. Beneath paler, mixed with grayish. Inside of pouches and surrounding region entirely yellowish white. Head and body 6¾ inches. Tail 2 2-12ths inches. Fore feet 1 1½-12ths inches. Middle claw 6 lines. Skull 1.55 inches in length; width .98, or 63¼-100 of length.

Collected at Morehouse Parish, La., by James Fairie, Esq.

THOMOMYS BOTTÆ. *Oryctomys bottæ*, Eyd. and Gerv.—Specimens of this species were collected by Lt. Trowbridge and Mr. R. D. Cutts, at Monterey and San Francisco.

THOMOMYS RUFESCENS, Max.—Collected at Fort Pierre by Dr. J. Evans.

Gov. I. I. Stevens.

THOMOMYS LATICEPS, Baird.—Cheek pouches moderate, well lined with hairs. Tail nearly half the length of the body, thickened at the base. Feet very large and broad, claws of the hand small, slender; the middle one measured below is about two sevenths the length of the entire palm, including the claws; its finger about two eighths. Claw of the thumb extending to nearly the middle of the hand. Skull very broad; muzzle short.

Color.—Above yellowish red-brown; the hairs on the dorsal region largely and abruptly tipped with blackish. Sides nearly uniform. Beneath tipped with reddish. Pouches dull white, the dusky tint of the surrounding portions dipping into them. Tail greyish white, dusky above. Head and body 5 2-12ths inches. Tail 2½ inches, short haired portion 1 11-12ths inches. Fore foot 11½ lines; longest claw 4 lines. Skull 1 1-12th inches broad.

Collected at Humboldt Bay by Lieut. Trowbridge, U. S. A.

Lieut. A. W. Whipple.

NEOTOMA OCCIDENTALIS, Cooper, Mss.—*N. drummondii*, Aud. and Bach. Size of Norway rat. Fur coarse, harsh, not compact. Posterior third of soles furred. Tail densely coated with long hairs; the vertebræ rather longer than the body, exclusive of the head.

Color.—Above brownish plumbeous, with a slight mixture of yellowish brown. Under portion of body and tail, with the feet, bluish white. Upper surface of tail grayish plumbeous, the basal wool little lighter. Head and body 10 inches, Tail vertebræ 8 5-12ths inches.

Collected at Shoalwater Bay, W. T., by Dr. J. G. Cooper.

Gov. I. I. Stevens.

REITHRODON MONTANUS, Baird.—Size about half that of the common mouse. Ears smaller; densely furred, and almost buried in the long hairs of the body. Tail about as long as the body; quite densely coated with short hairs.

Color.—Above, brown and pale yellowish gray; beneath, dull whitish; flanks and outside of the ear, pale yellowish brown; no rufous any where. Tail whitish, dusky on the upper surface. Head and body 2 2-12ths inches. Tail 2 inches. Hind foot from heel 6 lines. Skull 9¼ lines.

Collected in the vicinity of the Rocky Mountains, lat. 38°.

Lieut. E. G. Beckwith.

HESPEROMYS BOYLII, Baird.—Nearly as large as *H. gossypinus*. Ears very large, so scantily clothed with short hairs as to appear nearly naked. Tail considerably longer than the body, with a brush of hair at the tip. Head broad, much pointed.

Color.—Above mixed brown and yellowish brown; paler on the sides; the outside of the foreleg colored to near the wrist. Feet and under parts white. Head and body 3 4-12ths inches. Tail to end of vertebræ 3 9½-12ths inches; of hairs 4½ inches. Hind foot 10 lines.

Collected on the middle fork of the American River, California, by Dr. C. C. Boyle.

Lieut. R. S. Williamson.

HESPEROMYS AUSTERUS, Baird.—Smaller than *H. leucopus.* Tail as long as the body. Hind feet long. Color above brownish lead color, feet and under parts white. The dusky color of the sides extends on the outside of the forearm to the wrist. Head and body 2 11-12ths inches. Tail to end of vertebræ 2 10½-12ths inches; of hairs 3 inches. Hind foot from heel 9½ lines.

Collected at Fort Steilacoom, Puget Sound, by Dr. Geo. Suckley, U. S. A., and by Dr. Cooper on the Spokan Plains.

Gov. 1. I. Stevens.

The Committee on Mr. Durand's paper, entitled, "Plantæ Prattenianiæ Californicæ," reported in favor of publication in the Journal of the Academy.

On leave granted, Mr. Vaux presented for publication in the Proceedings, a paper by Mr. William R. Blake, Geologist of the U. S. Pacific R. R. Survey in California, entitled, "Notice of remarkable strata of the remains of Infusoria and Polythalamia, in the Tertiary formations of Monterey, California." Referred to Dr. Leidy, Mr. Isaac Lea, and Mr. Vaux.

On leave granted, Mr. Cassin presented for publication in the Proceedings, two papers by Prof. S. F. Baird, viz: "Characteristics of some new species of North American Mammalia, collected chiefly during the U. S. Surveys of a Pacific R. R. route to the Pacific, part 1;" and "Characteristics of some new species of North American Mammalia, collected by the U. S. and Mexican Boundary Survey, under Major Wm. H. Emory, U. S. A.;" both of which were referred to a Committee consisting of Mr. Cassin, Dr. Le Conte, and Col. Mc. Call.

Dr. Rand offered a resolution, which was adopted, appointing a Committee to receive the members of the American Medical Association, which convenes in this city on Tuesday, May 1st. The following were appointed the Committee: Dr. Rand, Mr. Cassin, Dr. Leidy, Dr. J. A. Meigs, Dr. Hallowell, and Dr. Le Conte.

On motion of Dr. Le Conte, the Curators were added to the committee.

Dr. Le Conte offered the following Preamble and Resolutions, which were unanimously adopted:—

Whereas, Mr. George Ord, President of the Academy of Natural Sciences of Philadelphia, is about to visit Europe, and has most kindly offered his valuable services to the Society:—

Resolved, That the Academy views with pleasure the opportunity thus afforded of enlarging its friendly relations with similar European Institutions.

Resolved, That the President of the Academy be requested to invite the attention of individuals and Societies, devoted to scientific pursuits, with which he may communicate, to the benefits which would result to

Science from a more extended intercourse with the Scientific Societies of this country.

Resolved, That the cordial wishes of the Academy are hereby tendered to Mr. Ord, for a prosperous voyage, a pleasant visit, and a safe return.

Resolved, That a copy of these Resolutions, certified by the officers of the present meeting, be addressed to the President of the Academy.

ELECTION.

Henry Hartshorne, M. D., of Philadelphia, was elected a *Member* of the Academy.

[Notices of election of the following as Members and Correspondents were omitted at the proper dates:—

June 27*th,* 1854.—J. Edwards Taggart, and Mr. M. Messchert, of Philadelphia, as *Members;* and Dr. Wm. A. Hammond, U. S. A., and John W. Audubon, Esq., of New York, as *Correspondents.*

October 31*st,* 1854.—Dr. Cheston Morris, Dr. Diller Luther, and Dr. Theodore Hilgard, of Philadelphia, as *Members;* and Dr. John C. Dalton, Jr., of New York, and Prof. B. L. C. Wailes, of Mississippi, as *Correspondents.*

November 28*th,* 1854.—Dr. Thomas M. Drysdale, of Philadelphia, as a *Member.*]